STILL BOTTOMS POND AREA INTERIM ENGINEERED COVER CONSTRUCTION COMPLETION REPORT
Including Fire Pond Closure

AMERICAN CHEMICAL SERVICE NPL SITE
GRIFFITH, INDIANA

MWH File No. 2090601

Prepared For:

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ACRONYMS AND ABBREVIATIONS

ACS	American Chemical Service, Inc.
BWES	Barrier Wall Extraction System
CCR	Construction Completion Report
FML	Flexible Membrane Liner
Great Lakes	Great Lakes Soil and Environmental
GWTP	Groundwater Treatment Plant
HDPE	High Density Polyethylene
HHSI	Hard Hat Services, Inc.
IDEM	Indiana Department of Environmental Management
INDOT	Indiana Department of Transportation
ISVE	In-situ Soil Vapor Extraction
K-P Area	Kapica-Pazmy Area
NPL	National Priorities List
OFCA	Off-Site Containment Area
PCB	Polychlorinated Biphenyls
PID	Photo-ionization detector
PPE	Personal Protective Equipment
ppm	parts per million
PRG	Preliminary Remediation Goal
psi	Pounds per Square Inch
PSVP	Performance Standard Verification Plan
RISC	Risk Integrated System of Closure
SBPA	Still Bottom Ponds Area
Site	ACS NPL Site
U.S. EPA	United States Environmental Protection Agency
VOC	Volatile Organic Compound

1.0 INTRODUCTION

This Construction Completion Report (CCR) summarizes the installation of the interim engineered cover in the Still Bottoms Pond Area (SBPA) of the American Chemical Service, Inc. (ACS) National Priorities List (NPL) Site (Site) in Griffith, Indiana during 2002. The United States Environmental Protection Agency (U.S. EPA) Consent Decree identification number for the interim engineered cover is 5.c. Completion of this interim cover system also is the final step in closure of the Fire Pond (U.S. EPA Consent Decree identification number 1.a.).

1.1 OBJECTIVES OF THE STILL BOTTOMS POND AREA ENGINEERED COVER

As outlined in the Final Remedial Design Report (Montgomery Watson, August 1999) the main objectives for the SBPA engineered cover are to:

1. Eliminate potential direct contact with volatile organic compound (VOC) and polychlorinated biphenyl (PCB) contaminated soils;

2. Eliminate potential worker contact with VOC-contaminated groundwater;

3. Reduce the potential for contaminant migration to groundwater by reducing infiltration into this area; and

4. Provide a surface seal for the In-situ Soil Vapor Extraction (ISVE) system to minimize potential short-circuiting and maximize the capture of VOC vapors.

In addition, covering the SBPA will reduce the stormwater infiltration into the area inside the barrier wall. This will reduce the amount of groundwater that needs to be extracted and treated by the groundwater treatment plant (GWTP) during ISVE implementation and long-term operation of the barrier wall extraction system (BWES).

1.2 DEFINING THE TWO PHASES OF THE SBPA ENGINEERED COVER INSTALLATION PROCESS

There are two Consent Decree components of the construction of the SBPA Cover: the interim engineered cover (Consent Decree ID 5.c.) and the final cover (Consent Decree ID 5.d.). The installation was divided into these two components so that the ISVE system could be installed and optimized prior to installation of the final cover. This phased approach minimizes potential damage to the final cover if repairs or modifications of the ISVE system were found to be necessary during the startup phase. The interim engineered cover consists of the initial 12 inches of compacted clay, a geotextile layer, and 6 to 8 inches of compacted gravel. The final engineered cover will be constructed on top of the interim

cover and will consist, of four inches of asphalt. As originally planned (and titled), this CCR covers the installation of the interim engineered cover in the SBPA.

1.3 REPORT ORGANIZATION

This report is organized in the five sections summarized below:

- **Section 1: Introduction.** This section summarizes the objectives of the work activities.

- **Section 2: Summary of Cover Installation Activities.** This section summarizes the selection and testing of clay imported to the Site and the closure of the Fire Pond. It also summarizes the grading of the subbase, installation of conveyance piping, clay placement, construction of the access road and parking area, installation of a geotextile, and gravel placement.

- **Section 3: Material Testing and Quality Confirmation.** This section outlines the material testing and quality confirmation methods employed to verify that the cover conformed to the design requirements. Procedures included pressure testing of groundwater conveyance piping, chemical analysis and certification of imported materials, geotechnical testing of imported clay and gravel, and geotextile material analysis. This section also discusses pressure testing and surveying.

- **Section 4: Health and Safety.** This section summarizes the health and safety measures implemented during the project.

- **Section 5: References.** This section lists the documents referred to in the preparation of this report.

2.0 SUMMARY OF COVER INSTALLATION ACTIVITIES

A chronological summary of all the construction activities is included in Appendix A. Photographs of construction activities are included in Appendix B.

2.1 SELECTION AND TESTING OF IMPORTED CLAY SOURCE

In early 2001, MWH selected a clay borrow source owned and operated by Austgen Equipment, located in Merrillville, Indiana to obtain clay for the interim engineered cover in the Off-Site Area (OFCA). This same clay borrow source was used for the SBPA interim engineered cover. Samples from the Merrillville clay source were collected for laboratory analysis to demonstrate that the material met the Indiana Department of Environmental Management (IDEM) Risk Integrated System of Closure (RISC) Nonresidential Default Closure Levels and the U.S. EPA Region IX Preliminary Remediation Goals (PRGs) for industrial soils. The imported clay was found to meet the established screening-level criteria and to be acceptable for use on the Site, as described in the Final Off-Site Area Interim Engineered Cover Construction Completion Report (MWH, February 2003). Since this same clay source was used for the SBPA interim cover, no additional chemical analysis of the clay was required for this project.

The imported clay was tested for geotechnical parameters to determine if the geotechnical properties of the clay had changed since the last use and for parameters for field quality assurance (QA) testing. These parameters included soil classification, grain size analysis, Atterberg limits, Proctor density, optimum moisture content, specific gravity, and coefficient of permeability. The tests and results are detailed in Section 3.3 of this report.

2.2 FIRE POND CLOSURE

During the PCB-impacted soil excavation activities in the fall of 2001, impacted material was excavated from the wetland west of the ACS facility and used to fill and close the empty Fire Pond in the On-Site Area (shown on Figure 1). The impacted material was analyzed for PCBs during the excavation activities and the sample results showed that the PCB concentration in the sediment was below 50 parts per million (ppm), which was the established threshold requiring off-site disposal (Final PCB-Impacted Soil Excavation in the Wetland Area Construction Completion Report (MWH, November 2002)). Approximately 4,900 cubic yards of impacted material was imported from the wetland area and placed in the Fire Pond.

Prior to the wetland excavation, approximately 2,500 cubic yards of visually impacted soils and debris from the drum removal activities in the spring of 2001 were placed in the Fire Pond (Final Buried Drum Removal in On-Site Containment Area Construction Completion Report (MWH, March 2003)).

The volume of PCB-impacted soil and visually impacted soil and debris placed in the Fire Pond resulted in higher ground surface elevations than originally anticipated for the SBPA cover. In order to meet the design elevations, approximately 3,800 cubic yards of material were removed from the Fire Pond area and moved to the Off-Site Area in July 2002 to fill a drainage swale in the cover area. A portion of the Off-Site clay cover surrounding the drainage swale was removed and the impacted material was placed underneath the cover. Once the drainage swale was filled, the clay was replaced and recompacted. More discussions of these activities will be included in the Construction Completion Report for the Final Engineered Cover in the Off-Site Area. The remaining soil left in the Fire Pond was incorporated as part of the SBPA interim engineered cover and the future SBPA final engineered cover. The inclusion of the Fire Pond in the engineered cover for the SBPA constitutes the closure of the Fire Pond.

2.3 GRADING OF THE SUBBASE

Once the excess material was removed from the SBPA as described above, Hard Hat Services, Inc. (HHSI) graded the subbase to meet the design elevations and drainage patterns. This involved excavating 22 inches of material along the perimeter of the cover area and grading the cover as detailed in the Final Remedial Design Report (Montgomery Watson, August 1999). During these intrusive activities, air monitoring was performed and the appropriate personal protective equipment (PPE) was worn. The subbase contours and drainage patterns are shown on Figure 2. After the subbase was graded, a vibrating smooth drum roller was used to compact the subbase and prepare it for the clay cover material.

Health and Safety practices followed and monitoring results obtained during construction are discussed in Section 4.0 of this report.

2.4 GROUNDWATER CONVEYANCE PIPE INSTALLATION

Prior to placement of the clay in the SBPA cover area, groundwater conveyance pipe for the future ISVE system was installed by HHSI. The first step of installing the conveyance pipe in the SBPA was to extend several existing conveyance pipes from the on-site groundwater treatment plant (GWTP) into the SBPA. These conveyance pipes consisted of two eight-inch diameter, one three-inch diameter, and five two-inch diameter high density polyethylene (HDPE) pipes. The eight-inch diameter pipes and the two-inch diameter pipes were extended and stubbed up at the location of the future blower shed that will be installed as part of the ISVE installation shown on Figure 3. The three-inch diameter pipe was teed on the west edge of the site and installed around the perimeter of the site in a loop as shown on Figure 3. Another three-inch diameter pipe line was also installed in the center of the cover area. Air monitoring was performed during all intrusive portions of the pipe installation and the appropriate PPE was worn by workers.

Drum carcasses and other debris were encountered at two locations while excavating the perimeter trench for the three-inch diameter conveyance pipe. The first location was directly south of the ACS Break Room Building on the north edge of the cover area as shown on

Figure 3. When initially encountered, some of the drum carcasses were removed and consolidated in another area within the boundaries of the cover. Visual inspection of this area indicated that several more drum carcasses and debris would need to be removed and relocated if the pipe was to be installed as planned. Therefore, to avoid exposing and potentially relocating additional debris, the pipe trench was relocated closer to the ACS Break Room Building as shown on Figure 3.

The second area where drum carcasses and debris was encountered was in the northeast corner of the cover area where debris was observed at approximately two feet below ground surface (bgs). Due to the potential for uncovering more debris and in order not to disturb the drum carcasses already encountered, the pipe in this area was installed at a depth of approximately one and a half feet bgs. Because the groundwater extraction piping runs in a loop, no pumps would be isolated if freezing occurs in the shallower pipe section. Therefore, the shallower pipe location is considered to be acceptable.

Drum carcasses and debris were also encountered while installing the three-inch diameter pipe in the center of the cover area. The drum carcasses and debris that were excavated during the piping installation were consolidated beneath the subbase in the west end of the cover area as shown on Figure 3.

The drum carcasses and debris that were encountered during the installation of the ISVE piping installation had previously been encountered during the remedial investigation performed by Warzyn in 1991. Therefore, the excavation and final deposition of this material was detailed in the Final Remedy (Montgomery Watson, August 1999).

The piping installation is summarized in this report due to the construction sequencing (with respect to the interim cover installation) and to present the as-built locations of the pipe until the appropriate construction completion reports are finalized. Further details regarding the piping installation will be included in the construction completion report for the SBPA ISVE System and On-Site Area BWES Upgrades.

2.5 CLAY PLACEMENT

On October 9, 2002, HHSI began importing and placing clay from the Merrillville, Indiana source used for the Off-Site Area interim cover. The clay was placed and compacted in two six-inch lifts for a total depth of 12 inches. The final clay contours are shown on Figure 4. Due to the low moisture content of the imported clay at the time of placement, a water truck was used to wet the clay so that the optimum moisture could be met. For purposes of clay placement, the specified moisture content ranged from the laboratory optimum moisture to the laboratory optimum moisture plus two percent (15% to 17%). The clay was then compacted using a vibrating smooth drum roller. In-place density and moisture testing was performed on the clay at a frequency of eight tests per acre per six-inch lift. Table 1 summarizes the compaction test results and the test locations are shown on Figure 5. Copies of the density test forms are provided in Appendix C.

In four areas around the perimeter of the site, the clay could not be placed and compacted to the required depth of 12-inches due to shallow storm water piping and/or catch basins. Because specific elevations needed to be maintained across the site, additional subbase material could not be placed over these areas. It was determined that without this additional material, placing and compacting the clay had a high potential to damage pipe and/or catch basins. Therefore, to achieve the required permeability rate of the cover, 60-mil flexible membrane liner (FML) was placed over these areas. The FML utilized was from an extra roll of the FML used for the Off-Site Area final cover. Material properties of this material will be submitted in the Construction Completion Report for the Off-Site Area final cover. To facilitate placement around catch basins, a hole was cut in FML to slide it over the catch basin and the gap between the FML and the catch basin was then sealed with bentonite grout. A piece of geofabric was then placed over the FML to protect the FML from damage and gravel was placed over these areas to achieve the design grades. These locations are shown on Figure 6, along with an installation detail.

As shown on Figure 7, the interim cover contours promote proper drainage away from the SBPA.

2.6 INSTALLATION OF ACCESS ROAD AND PARKING AREA

After the clay was placed and proper compaction was confirmed, HHSI installed a gravel access road and parking area, as shown on Figure 8. The access road and parking area were constructed by first placing a polypropylene nonwoven geofabric on top of the clay and then placing 12 inches of gravel. The gravel was then compacted using a smooth drum vibrating roller. In-place dry density testing of the compacted gravel was performed to document that the gravel was compacted sufficiently. A specific Proctor test was not performed on the actual aggregate used. Instead, a typical maximum density as provided by the source quarry was utilized. This was done because the road aggregate will not be required to support a structural load (such as a foundation). The quarry personnel indicated that the typical dry maximum density of the Indiana #53 aggregate ranged from 130 to 140 pounds per cubic foot (PCF). A maximum dry density of 135 pcf was utilized for acceptance of the access road. The compaction test results are summarized in Table 1 and the test locations are shown on Figure 8.

2.7 INSTALLATION OF GEOTEXTILE AND GRAVEL LAYER

On May 5, 2003, when the installation of the SBPA ISVE piping was substantially complete, Midwest Environmental, Inc. (MEI) began placing the geotextile and the gravel layer across the remainder of the site. Areas where the clay had eroded were repaired by placing additional clay, where necessary, regrading the clay using a bulldozer, and compacting the clay using a roller. This work was completed prior to placing the geotextile and gravel. MEI began installing the final geotextile and the gravel layer components of the interim cover on May 5th and completed on May 21st. Placement of the gravel layer included grading and

compacting of the gravel. Six to eight inches of gravel were placed across the entire cover area. The top of gravel layer was surveyed on August 18 and 19, 2003. The final contours of the gravel layer are shown on Figure 9.

3.0 MATERIAL TESTING AND QUALITY CONFIRMATION

Material testing and quality confirmation was conducted in accordance with the Construction Quality Assurance Plan (CQAP) (Montgomery Watson, June 1999) and the Performance Standard Verification Plan (PSVP) (Montgomery Watson, June 1999) to document that the cover conformed to the design requirements.

3.1 PRESSURE TESTING OF INSTALLED GROUNDWATER CONVEYANCE PIPE

All conveyance piping installed during the completion of the SBPA interim cover was pressure tested and found to be without leakage. Two-inch diameter and three-inch diameter pipes were pressure tested at 90 psi for 15 minutes. Ninety psi was selected for the pressure testing because it is the maximum pressure that the GWTP's air compressor can generate within the pipes. While pressure testing the eight-inch diameter pipes, it was determined that the gasket on the pressure coupling could not hold more than 60 psi before the gasket would fail. This situation presented a potential health and safety concern for the field testing crew. Therefore, it was determined that the eight-inch lines would be pressure tested at 50 psi for 30 minutes. A test pressure of 50 psi still provides a factor of safety of 10 times the maximum operating pressure for the eight-inch diameter pipes. Information of this conveyance piping will also be included in the future Construction Completion Report for the SBPA ISVE System and On-Site Area BWES Upgrades. A copy of the pipe manufacturer's specifications is included in Appendix D.

3.2 CHEMICAL ANALYSIS AND CERTIFICATION OF IMPORTED MATERIALS

Clay for the SBPA interim cover was imported from the same clay borrow source, located in Merrillville, Indiana, that was used for the Off-Site Area interim cover. Clay samples from this source were collected and tested for contaminants in both March and July 2001. The results are presented in the Final Off-Site Area Interim Engineered Cover Construction Completion Report (MWH, February 2003). This data confirms that the imported clay is acceptable for use at the ACS site.

The sand used for the conveyance pipe trenches was certified by the supplier as 100 percent virgin material and field observations indicated that there was no staining or odor. Therefore, the sand was determined to be acceptable and no chemical analysis of the sand was performed. A letter from the sand supplier certifying the sand is 100 percent virgin material is included in Appendix E.

3.3 VISUAL INSPECTION AND GEOTECHNICAL TESTING OF IMPORTED CLAY

The imported clay was visually inspected and found to be free of grass, roots, brush, other organic material, debris, and refuse and therefore deemed suitable for cover material. The clay was installed in six-inch lifts as specified in the Final Remedial Design Report (Montgomery Watson, August 1999).

The imported clay for the interim engineered cover was analyzed for geotechnical characteristics including soil classification, grain size analysis, Atterberg limits, Proctor density, optimum moisture content, specific gravity, and coefficient of permeability. This testing was performed by Great Lakes Soil and Environmental Consultants, Inc. (Great Lakes). The specific testing methods and results are summarized in Table 2. The geotechnical testing reports are included in Appendix C.

During the construction of the SBPA interim cover, a geotechnical sample collected from the clay source indicated a permeability of 1.7×10^{-7} cm/s. This exceeds the specified permeability of 1×10^{-7} cm/s. Therefore, two additional samples were collected from the in-place clay on February 28, 2003 and analyzed by Great Lakes Soil and Environmental, Inc. to determine if the previous sample result was an anomaly due to the large inconsistency with the test results from the interim cover in the Off-Site Area or if the properties of the clay material had actually changed. The locations of these additional samples are shown on Figure 5. The permeability results of these additional samples were 2.4×10^{-8} cm/s and 3.3×10^{-7} cm/s; resulting in an average permeability of 1.8×10^{-7} cm/s for the two samples. These two sample results indicate that the clay, as placed, may not meet the permeability requirements. Multiple options are being considered to supplement the cover system so that the hydraulic conductivity requirements will be achieved. The supplemental work will be conducted in conjunction with installation of the final cover.

The results of the other geotechnical testing indicated that the clay was suitable for the intended use.

Great Lakes conducted in-place soil density testing on the installed clay. The clay was tested to verify that it was compacted to 95% of maximum dry density at the optimum moisture range. Each six-inch lift was tested at a frequency of eight tests per acre and the testing was conducted with a nuclear density testing unit. Nuclear density testing was performed at all locations and sand cone tests were performed at two of these locations as a quality control measure.

The field quality assurance test results were compared to the maximum dry density and optimum moisture as determined in the laboratory. If either the density or moisture requirements were not met, the non-passing areas were reworked (recompacted, rewetted, or both) and retested until the criteria were met. As Table 1 shows, all locations eventually met the compaction and moisture requirements. It should be noted that on the first day of compaction testing (October 10, 2002) the wrong Proctor value for dry density was used. This was corrected on subsequent days of testing.

3.4 VISUAL INSPECTION AND GEOTECHNICAL TESTING OF IMPORTED GRAVEL

Indiana Department of Transportation (INDOT) #53 aggregate gravel was imported from Thorton Stone Quarry for construction of the access road and parking area. The gravel was placed using a tracked bulldozer and was compacted using a vibrating smooth drum roller. The material was visually inspected and found to be free of unsuitable material.

To confirm that the gravel was compacted to the required 90% of maximum dry density, Great Lakes performed in-place density testing. Information received from the material source indicated that typical values of the gravel's dry density ranged from 130 to 140 pounds per cubic foot. Therefore, the average of 135 pounds per cubic feet was used as the Proctor value to determine the in-place density. In-place density testing was performed on November 12, 2002 and all tests indicated compaction of at least 90% of the maximum dry density.

Compaction testing was not performed on the gravel that was not part of the access road or the parking area (designated as non-road gravel) as part of the interim cover work. Because the final cover installation will not occur for almost a year, MWH was aware that the non-road gravel would have to be dressed and potentially recompacted prior to installation of the final cover in order to provide an acceptable base for the final cover. The degree of compaction and the frequency of compaction samples of the non-road gravel will be based upon the installation requirements for the asphalt final cover. This will be finalized once the quality assurance plans are received from the selected subcontractor. The compaction testing requirements and frequency of the non-road gravel will be included in the CCR for the final cover.

3.5 GEOTEXTILE MATERIAL ANALYSIS

MWH reviewed and approved the product specifications and sample of the geotextile fabric prior to installation of the access road and parking area. The geotextile fabric used was Mirafi Non-Woven Geotextile 1160N. MWH found the mass, thickness, apparent opening size, grab tensile strength, and puncture strength of the geotextile fabric to be satisfactory. During installation MWH visually inspected the geotextile fabric and did not discover any deficiencies.

The same geotextile material that was placed beneath the access road and parking area was placed over the remaining cover area prior to placement of the gravel layer. During the placement, MWH visually inspected the geotextile fabric and did not discover any deficiencies.

A copy of the geotextile manufacturer's specifications is included in Appendix F.

3.6 SURVEYING

The Site was surveyed before, during, and after the placement of the clay layer and the gravel layer to confirm that the desired final grades and minimum thicknesses were obtained. In addition, all the conveyance pipe locations and stubs were surveyed. These surveys were used to develop final "as-built" drawings. Surveying was performed by Area Survey and certified by an Indiana-licensed surveyor. The final contours and clay and gravel thickness information are based upon survey data collected by Area Survey.

On the final clay contour figures submitted by HHSI, it was noted that the thickness of clay in three areas (the southeast corner of the ACS breakroom building and two areas in the southeast corner of the cover) was less than the twelve inch requirement by at least 1.2 inches. To determine if these areas actually had deficient thicknesses, the actual clay thickness was measured in fourteen locations. The clay thickness was measured by drilling a hole in the clay with a hand auger and measuring the clay thickness with a tape measure. After the clay thickness was measured, the removed clay was placed back into the auger hole and compacted by driving over the area with a truck tire.

Measurements taken from the fourteen locations indicated a cover thickness of 12 inches or more. The two apparently deficient locations in the southeast corner were found to have at least twelve inches of clay. Therefore, placement of additional clay was not required in these areas. The southeast corner of the breakroom building was confirmed to be deficient by approximately 1.2 inches. However, because of the need to maintain specific elevations across the site, additional clay could not be placed in this area. Therefore, clay thicknesses of both 12 inches and 10.8 inches were used in the calculations for evaluating options for obtaining the performance requirements for the cover system as detailed in the Final Remedial Design Report. The areas with less than 12 inches of clay thickness and the locations of the 14 augured borings are shown on Figure 4.

4.0 HEALTH AND SAFETY

Prior to starting work activities at the site, a temporary security fence was erected around the perimeter of the work area by MWH. This fence was used to restrict the access of unauthorized personnel and to control the flow of contractor traffic through the site. It also served as an exclusion zone for intrusive work that occurred at the site.

A kickoff health and safety meeting for the project was conducted on September 10, 2002 for all construction workers. Daily health and safety tailgate meetings were conducted throughout the project. The topics of these meetings included but were not limited to potential exposure to contaminants, level of personal protection equipment (PPE) required and potential upgrades, cautions for working around heavy equipment, and protocols for communication with other contractors. Copies of daily health and safety tailgate logs are included in Appendix G.

Work was conducted in Level D PPE, which included safety shoes, hard hats, and safety glasses. During intrusive work, air monitoring was conducted to field screen to determine if VOCs were present. These air monitoring results, included in Appendix H, were used to select the proper PPE for the work performed. Air monitoring results during intrusive work required an upgrade from Level D to Level C on several occasions. Level C PPE included a half-face respirator, Tyvek® suit, and chemical resistant gloves. Because equipment operators did not come in direct contact with potentially contaminated soils, they were only required to upgrade to a respirator. On several occasions when air monitoring did not require an upgrade to Level C, operators and laborers did upgrade their PPE at their own discretion. Air monitoring was not conducted during the placement of the clay cover because the cover material was non-contaminated material.

5.0 REFERENCES

1. *Performance Standard Verification Plan, ACS NPL Site,* Montgomery Watson, June 1999.

2. *Construction Quality Assurance Plan, ACS NPL Site,* Montgomery Watson, June 1999.

3. *Final Remedial Design Report, Final Remedy, ACS NPL Site,* Montgomery Watson, August 1999.

4. *Final Off-Site Area Interim Engineered Cover Construction Completion Report*, MWH, February 2003.

5. *Final PCB-Impacted Soil Excavation in the Wetland Area Construction Completion Report*, MWH, November 2002.

6. *Final Buried Drum Removal in On-Site Containment Area Construction Completion Report*, MWH, March 2003.

7. *Work Plan for Still Bottoms Pond Area (SBPA) Interim Cover Installation*, Hard Hat Services, Inc., September 10, 2002.

8. *Construction Quality Assurance Plan for Still Bottoms Pond Area (SBPA) Interim Cover Installation*, Hard Hat Services, Inc., September 10, 2002.

9. *Health and Safety Plan for Still Bottoms Pond Area (SBPA) Interim Cover Installation*, Hard Hat Services, Inc., September 10, 2002.

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Tables

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Table 1
Field Compaction Test Results
ACS SBPA Interim Cover
Griffith, Indiana

First 6" Clay Lift					
Test Location	**% Compaction**	**% Moisture**	**Test Date**	**Test ID**	**Remarks**
1	100.2	15.0	10/15/2002	3	Pass
2	98.4	15.4	10/15/2002	2	Pass
3	98.3	15.3	10/15/2002	9	Pass
4	97.1	16.3	10/14/2002	2	Pass
5	97.8	15.3	10/11/2002	3	Pass
6	98.8	15.1	10/11/2002	5	Pass
7	96.1	16.4	10/11/2002	10	Pass
8	97.7	16.0	10/11/2002	2	Pass
9	96.3	16.9	10/11/2002	11	Pass
10	97.3	16.8	10/11/2002	12	Pass
11	96.5	15.8	10/14/2002	3	Pass
12	95.6	16.8	10/14/2002	8	Pass
13	102.8	15.8	10/14/2002	6	Pass
14	96.0	15.7	10/14/2002	9	Pass
15	97.0	16.3	10/21/2002	1	Pass
16	99.8	15.3	10/21/2002	11	Pass
17	103.2	15.3	10/22/2002	1	Pass
18	101.4	15.7	10/22/2002	5	Pass
19	101.4	15.2	10/21/2002	4	Pass
20	96.0	16.1	10/22/2002	2	Pass
21	100.9	15.2	10/21/2002	10	Pass
22	96.0	15.8	10/21/2002	13	Pass
23	98.1	15.8	10/21/2002	8	Pass
24	103.3	15.8	10/21/2002	12	Pass
25	96.3	15.6	10/21/2002	7	Pass
Second 6" Clay Lift					
Test Location	**% Compaction**	**% Moisture**	**Test Date**	**Test ID**	**Remarks**
1	98.8	16.6	10/22/2002	7	Pass
2	98.1	16.5	10/22/2002	11	Pass
3	97.9	15.4	10/22/2002	6	Pass
4	100.4	16.5	10/22/2002	14	Pass
5	100.1	16.0	10/23/2002	2	Pass
6	97.4	16.6	10/23/2002	1	Pass
7	100.4	15.8	10/22/2002	12	Pass
8	101.1	15.8	10/24/2002	5	Pass, Sand cone test
9	100.7	16.1	10/24/2002	2	Pass
10	97.1	17.0	10/22/2002	10	Pass
11	99.3	16.8	10/24/2002	8	Pass
12	99.8	15.7	10/24/2002	4	Pass
13	101.0	15.6	10/24/2002	9	Pass
14	102.8	15.4	10/24/2002	1	Pass
15	100.7	15.2	10/28/2002	2	Pass, Sand cone test
16	97.8	15.6	10/24/2002	15	Pass
17	99.7	15.8	10/28/2002	3	Pass
18	100.6	15.8	10/24/2002	16	Pass
19	98.3	16.8	10/24/2002	6	Pass

Table 1
Field Compaction Test Results
ACS SBPA Interim Cover
Griffith, Indiana

Second 6" Clay Lift					
Test Location	**% Compaction**	**% Moisture**	**Test Date**	**Test ID**	**Remarks**
20	97.0	16.3	10/28/2002	1	Pass
21	99.2	16.2	10/24/2002	10	Pass
22	98.5	16.5	10/24/2002	14	Pass
23	98.1	15.6	10/24/2002	12	Pass
24	101.1	15.4	10/24/2002	13	Pass
25	98.1	15.6	10/24/2002	11	Pass
Gravel Access Road and Parking Area					
Test Location	**% Compaction**	**% Moisture**	**Test Date**		**Remarks**
1	97.3	NA	11/12/2002		Pass
2	90.8	NA	11/12/2002		Pass
3	90	NA	11/12/2002		Pass
4	90.4	NA	11/12/2002		Pass
5	90.6	NA	11/12/2002		Pass

Notes:

1. The Standard Proctor value for the imported clay was 112 pcf.
   The Standard Proctor value for the 10/10/02 testing was incorrect.
2. The Optimum Moisture for the imported clay was 15%.
3. The Standard Proctor value assumed for the imported gravel was 135 pcf.
4. NA - Not Applicable.
5. Test locations for the clay are shown on Figure 5. Test locations for the gravel are shown on Figure 8.

Table 2
Geotechnical Testing Results
ACS SBPA Interim Cover
Griffith, Indiana

Geotechnical Test Description	Specified Method	Testing Frequency	Units	Sample BS-1
Soil Classification	USCS System	1 test every 5,000 cubic yards	n/a	CL, lean clay
Grain Size Analysis	ASTM D422	1 test every 5,000 cubic yards	% + 3 inches	0.0
			% Gravel	0.0
			% Sand	10.1
			% Silt	43.8
			% Clay	46.1
Grain Size Analysis	ASTM D1140	1 test every 5,000 cubic yards	% Fines	88.1
Optimum Moisture Content	ASTM D2216	1 test every 5,000 cubic yards	%	15.0
Atterberg Limits	ASTM D4138	1 test every 5,000 cubic yards	Liquid Limit, L_L	31
			Plastic Limit, P_L	17
			Plasticity Index, P_I	14
Moisture-Density Curve/Proctor Density	ASTM D698	1 test every 5,000 cubic yards & all changes in material	lbs./ft.^{3}	112.0
Specific Gravity	ASTM D854	1 test every 5,000 cubic yards & all changes in material	n/a	2.81
Coefficient of Permeability	ASTM D5084	1 test every 5,000 cubic yards & all changes in material	cm/sec	1.7E-07
	ASTM D5084	Perm #1 (collected 2/28/03)	cm/sec	2.30E-08
	ASTM D5084	Perm #2 (collected 2/28/03)	cm/sec	3.30E-07

Notes:
n/a = not applicable
BS = Borrow Source

Figures

LEGEND:

- COVER PERIMETER AND APPROXIMATE WORK AREA
- EXISTING SURFACE CONTOUR (SURVEYED APRIL 2002)
- EXISTING BARRIER WALL
- 24" ADS — RUNOFF CATCH BASIN LINE
- STORM WATER LINE
- PP — ABOVE GROUND PROCESS PIPING LINE

REV	DATE	BY	DESCRIPTION

SCALE 1" = 50'-0"

WARNING 0 ½ 1 IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

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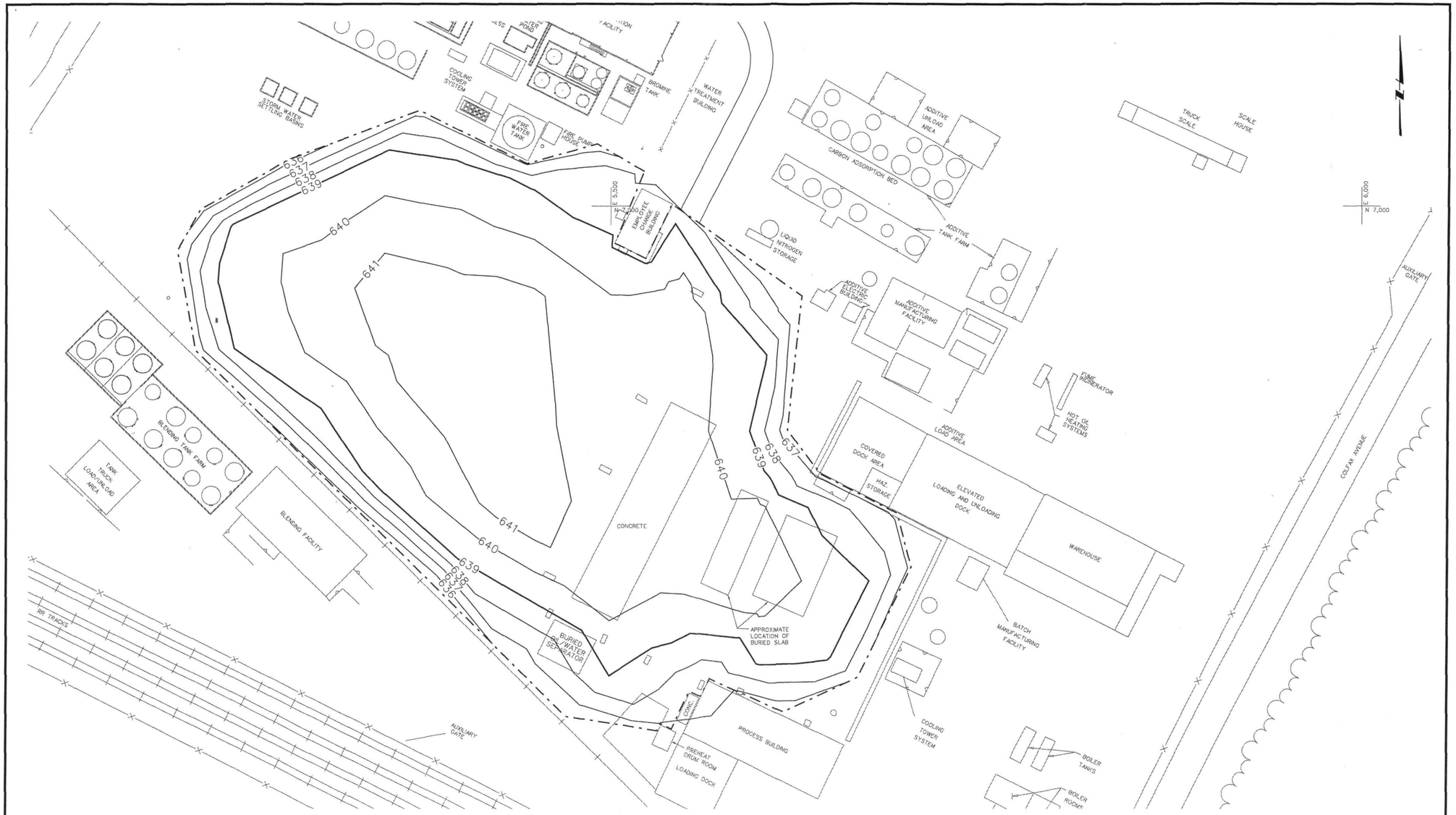
GRIFFITH, INDIANA

STILL BOTTOMS POND AREA INTERIM COVER CCR

STILL BOTTOMS POND AREA LOCATION MAP

FIGURE 1

Job No: MW Job • File: J:/209/0601 ACS/0120/MWDWGs/INTERIM-C-01 Plot Date: $$$$date$$$$ $$time$$



Job No: MW Job # Filer: J:/209/0601 ACS/0120/MWDWGs/TOP OF SUBBASE.DGN Plot Date: 05-MAY-2003 13:39

REV	DATE	BY	DESCRIPTION

SCALE 1"=30'

WARNING 0 ½ 1 IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

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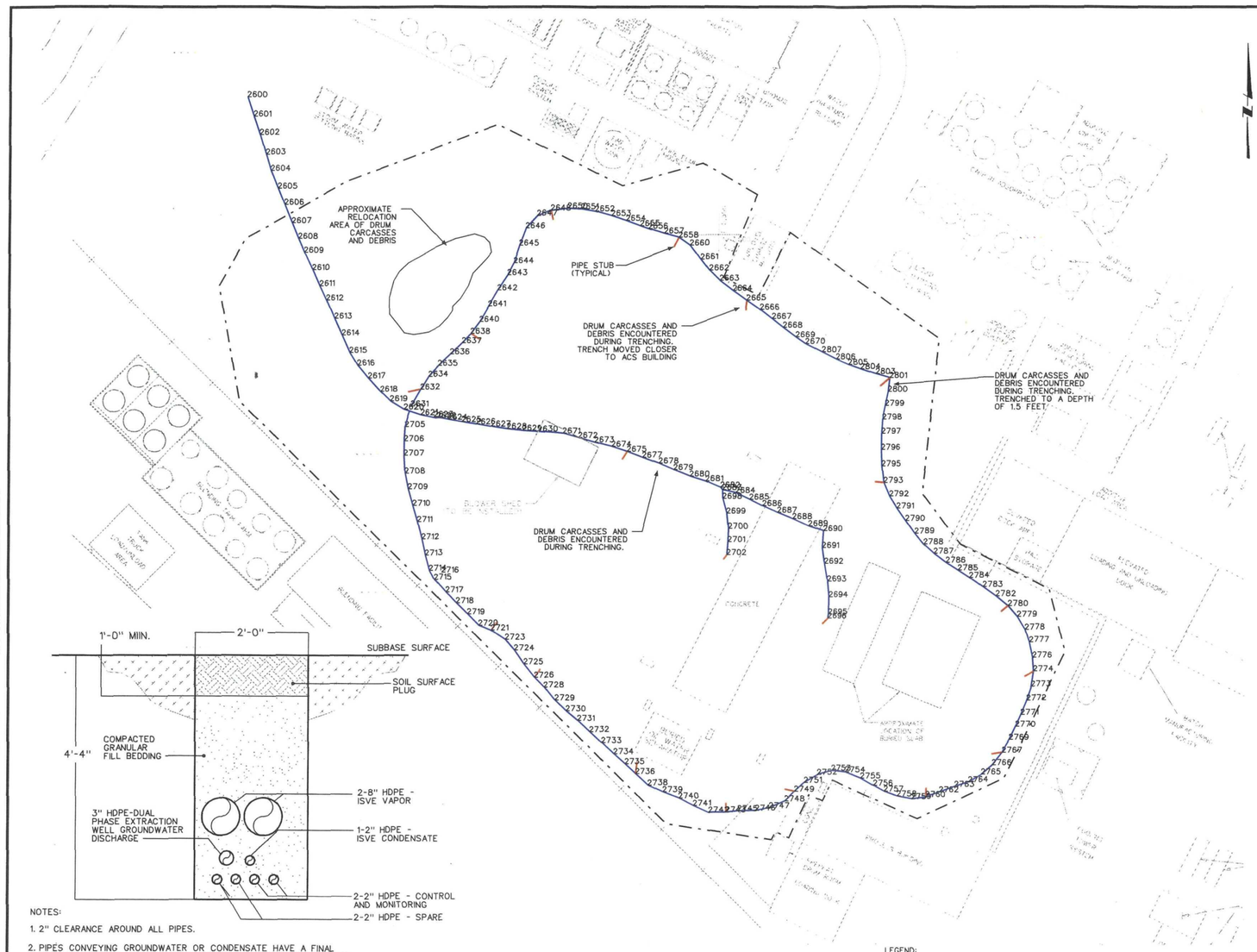
GRIFFITH, INDIANA

STILL BOTTOMS POND AREA INTERIM COVER CCR

TOP OF SUBBASE CONTOURS

FIGURE 2



ACS CONVEYANCE PIPING RECORD DATA
OCTOBER 9, 2002 AND OCTOBER 14, 2002

SURVEY POINT	DESCRIPTION	NORTHING	EASTING	TOP OF PIPE ELEVATION
2600	PIPE	7078.85	5227.93	632.59
2601	PIPE	7067.88	5231.63	632.52
2602	PIPE	7057.38	5235.20	632.96
2603	PIPE	7048.15	5238.87	633.87
2604	PIPE	7036.73	5241.55	634.11
2605	PIPE	7026.80	5245.82	633.52
2606	PIPE	7017.47	5249.63	633.79
2607	PIPE	7006.94	5253.99	634.25
2608	PIPE	6998.00	5257.83	634.71
2609	PIPE	6990.04	5261.33	635.63
2610	PIPE	6980.11	5265.99	636.19
2611	PIPE	6970.85	5270.29	636.47
2612	PIPE	6962.48	5274.21	637.09
2613	PIPE	6952.02	5279.02	637.48
2614	PIPE	6942.31	5283.33	637.49
2615	PIPE	6932.25	5287.88	636.81
2616	PIPE	6924.90	5292.40	636.42
2617	PIPE	6917.46	5298.53	636.50
2618	PIPE	6909.80	5305.62	636.94
2619	PIPE	6904.11	5311.42	636.77
2620	PIPE	6899.30	5319.39	637.05
2621	PIPE	6896.13	5328.85	637.06
2622	PIPE	6894.18	5338.41	637.01
2623	PIPE	6894.96	5336.62	636.98
2624	PIPE	6893.44	5344.68	637.27
2625	PIPE	6892.11	5352.65	637.67
2626	PIPE	6890.82	5361.02	637.99
2627	PIPE	6888.44	5369.78	637.72
2628	PIPE	6888.10	5378.89	637.78
2629	PIPE	6887.15	5387.81	637.43
2630	PIPE	6886.59	5396.94	637.13
2631	PIPE	6901.13	5323.33	637.95
2632	PIPE	6910.89	5328.59	638.05
2633	STUB	6908.27	5321.33	637.31
2634	PIPE	6918.31	5333.28	638.24
2635	PIPE	6924.58	5338.78	638.71
2636	PIPE	6931.25	5345.87	638.91
2637	PIPE	6937.70	5352.80	639.22
2638	PIPE	6943.17	5357.57	639.42
2639	STUB	6939.81	5362.71	638.94
2640	PIPE	6950.10	5362.61	639.17
2641	PIPE	6959.01	5367.80	638.85
2642	PIPE	6968.20	5373.00	638.46
2643	PIPE	6977.02	5378.64	638.39
2644	PIPE	6983.92	5382.16	638.21
2645	PIPE	6994.08	5385.39	637.47
2646	PIPE	7003.97	5389.03	637.48
2647	PIPE	7011.18	5395.61	637.18
2648	PIPE	7014.10	5403.38	637.11
2649	STUB	7008.39	5404.63	636.72
2650	PIPE	7015.29	5413.10	637.02
2651	PIPE	7015.00	5420.79	636.85
2652	PIPE	7013.66	5428.90	637.08
2653	PIPE	7011.12	5436.36	637.05
2654	PIPE	7008.29	5446.88	637.11
2655	PIPE	7005.37	5455.10	637.18
2656	PIPE	7003.67	5459.88	637.59
2657	PIPE	7000.96	5468.95	637.78
2658	PIPE	6998.65	5477.31	637.46
2659	STUB	6992.95	5474.41	637.15
2660	PIPE	6994.12	5483.86	637.39
2661	PIPE	6986.09	5480.86	637.43
2662	PIPE	6979.65	5494.89	636.96
2663	PIPE	6973.75	5500.84	636.71
2664	PIPE	6968.00	5508.49	636.19
2665	PIPE	6962.50	5516.55	635.97
2666	PIPE	6957.02	5524.35	636.12
2667	PIPE	6951.80	5531.11	636.28
2668	PIPE	6946.75	5537.58	636.53
2669	PIPE	6941.28	5544.97	636.49
2670	PIPE	6937.40	5550.59	636.72
2671	PIPE	6885.49	5411.05	638.41
2672	PIPE	6883.04	5419.98	638.23
2673	PIPE	6880.34	5429.50	638.53
2674	PIPE	6877.85	5439.35	638.79
2675	PIPE	6875.02	5448.29	638.62
2676	STUB	6870.31	5445.25	638.35
2677	PIPE	6871.63	5457.28	638.54
2678	PIPE	6868.11	5466.75	638.22
2679	PIPE	6864.45	5475.29	638.67
2680	PIPE	6860.68	5484.41	638.39
2681	PIPE	6857.85	5493.47	637.70
2682	PIPE	6854.14	5501.97	637.38
2683	PIPE	6852.69	5503.07	637.55
2684	PIPE	6851.07	5510.77	637.40
2685	PIPE	6847.24	5518.88	637.39
2686	PIPE	6843.43	5528.41	636.26
2687	PIPE	6839.65	5534.98	636.75
2688	PIPE	6836.04	5543.81	637.21
2689	PIPE	6831.93	5553.00	636.85
2690	PIPE	6829.03	5561.44	637.72
2691	PIPE	6819.28	5560.77	638.42
2692	PIPE	6810.17	5562.16	639.29
2693	PIPE	6799.93	5563.90	638.77
2694	PIPE	6790.83	5564.76	638.12
2695	PIPE	6780.89	5564.55	638.45
2696	PIPE	6778.55	5564.25	638.39
2697	STUB	6774.96	5560.79	638.46
2698	PIPE	6847.65	5503.22	638.22
2699	PIPE	6839.13	5505.59	638.91
2700	PIPE	6830.40	5506.56	638.82
2701	PIPE	6822.72	5506.23	637.83
2702	PIPE	6815.21	5505.70	637.29
2703	STUB	6812.45	5503.64	637.66
2704	STUB	6956.49	5515.76	638.01
2705	PIPE	6889.18	5319.83	637.75
2706	PIPE	6880.97	5319.43	637.56
2707	PIPE	6872.62	5319.40	637.86
2708	PIPE	6862.31	5319.96	637.61
2709	PIPE	6853.25	5321.75	637.52
2710	PIPE	6843.68	5324.52	637.56
2711	PIPE	6834.33	5327.20	637.69
2712	PIPE	6824.32	5329.81	636.86
2713	PIPE	6814.95	5331.70	636.42
2714	PIPE	6806.16	5334.16	635.27
2715	PIPE	6800.87	5337.10	634.65
2716	STUB	6805.00	5341.50	634.91
2717	PIPE	6783.80	5343.81	634.73
2718	PIPE	6787.37	5349.87	635.05
2719	PIPE	6780.98	5356.39	635.35
2720	PIPE	6774.43	5362.81	635.49
2721	PIPE	6771.56	5370.24	635.44
2722	STUB	6776.56	5373.83	634.81
2723	PIPE	6786.32	5378.29	635.20
2724	PIPE	6760.11	5383.61	634.57
2725	PIPE	6752.13	5389.08	634.38
2726	PIPE	6744.38	5395.37	638.36
2727	STUB	6749.19	5398.62	634.44
2728	PIPE	6738.82	5400.97	634.46
2729	PIPE	6731.17	5407.10	634.62
2730	PIPE	6724.92	5413.44	634.46
2731	PIPE	6719.42	5420.08	634.35
2732	PIPE	6712.91	5427.24	634.97
2733	PIPE	6706.49	5434.28	634.51
2734	PIPE	6700.12	5441.14	634.58
2735	PIPE	6694.37	5447.62	634.58
2736	PIPE	6688.68	5453.87	634.96
2737	STUB	6695.00	5454.59	635.62
2738	PIPE	6682.09	5461.12	634.76
2739	PIPE	6678.07	5468.71	634.99
2740	PIPE	6674.50	5478.78	635.05
2741	PIPE	6670.24	5487.03	635.01
2742	PIPE	6666.25	5495.89	634.62
2743	PIPE	6666.39	5505.65	635.00
2744	STUB	6671.56	5505.56	634.58
2745	PIPE	6667.08	5512.54	634.93
2746	PIPE	6667.38	5522.87	635.60
2747	PIPE	6668.70	5530.77	635.21
2748	PIPE	6672.79	5539.63	635.60
2749	PIPE	6678.41	5545.43	635.31
2750	STUB	6679.53	5539.59	634.61
2751	PIPE	6683.58	5550.97	635.05
2752	PIPE	6688.06	5558.45	634.59
2753	PIPE	6690.32	5566.64	635.78
2754	PIPE	6689.52	5574.80	635.49
2755	PIPE	6685.98	5583.63	635.26
2756	PIPE	6681.82	5591.03	635.30
2757	PIPE	6678.49	5597.22	635.39
2758	PIPE	6675.70	5604.92	634.89
2759	PIPE	6674.17	5613.22	634.64
2760	PIPE	6675.25	5621.59	634.56
2761	STUB	6680.49	5621.68	635.13
2762	PIPE	6678.01	5629.44	634.81
2763	PIPE	6681.14	5638.34	635.79
2764	PIPE	6683.83	5646.22	635.51
2765	PIPE	6688.19	5653.58	635.07
2766	PIPE	6693.55	5659.77	634.81
2767	PIPE	6700.75	5665.50	635.08
2768	STUB	6698.73	5659.17	635.72
2769	PIPE	6708.33	5669.56	635.08
2770	PIPE	6715.87	5673.09	634.91
2771	PIPE	6722.77	5676.04	634.72
2772	PIPE	6731.10	5679.28	634.78
2773	PIPE	6738.15	5681.99	634.92
2774	PIPE	6747.89	5683.22	635.42
2775	STUB	6744.78	5678.01	635.37
2776	PIPE	6755.83	5682.81	635.66
2777	PIPE	6764.82	5680.70	635.97
2778	PIPE	6772.07	5678.30	635.32
2779	PIPE	6779.51	5673.78	635.85
2780	PIPE	6785.73	5668.54	636.06
2781	STUB	6782.23	5664.45	636.71
2782	PIPE	6791.40	5661.53	635.86
2783	PIPE	6796.70	5654.01	635.78
2784	PIPE	6802.01	5646.32	635.67
2785	PIPE	6806.34	5639.80	635.90
2786	PIPE	6810.80	5632.79	635.95
2787	PIPE	6815.97	5625.64	635.85
2788	PIPE	6821.34	5619.65	636.01
2789	PIPE	6827.71	5614.50	635.18
2790	PIPE	6835.08	5609.21	635.11
2791	PIPE	6842.21	5604.06	635.38
2792	PIPE	6848.98	5599.67	635.64
2793	PIPE	6856.96	5596.27	636.90
2794	STUB	6857.30	5590.83	637.43
2795	PIPE	6866.53	5595.10	636.43
2796	PIPE	6876.09	5594.74	636.71
2797	PIPE	6885.37	5594.84	637.30
2798	PIPE	6893.80	5595.40	638.30
2799	PIPE	6901.56	5596.93	638.36
2800	PIPE	6909.69	5598.53	637.80
2801	PIPE	6917.71	5599.45	637.13
2802	STUB	6912.86	5593.78	637.49
2803	PIPE	6919.90	5591.25	637.07
2804	PIPE	6922.79	5582.39	637.61
2805	PIPE	6925.33	5575.45	638.38
2806	PIPE	6928.51	5568.38	637.69
2807	PIPE	6932.54	5560.13	636.88

Plot Date: 18-FEB-2004 09:49
File: J:\209\0601 ACS\0120\MWDWGs\conveyance piping layout_2.DGN
Job No: MW Job *

REV	DATE	BY	DESCRIPTION

SCALE: 1"=30'

WARNING: 0 1/2 1 — IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

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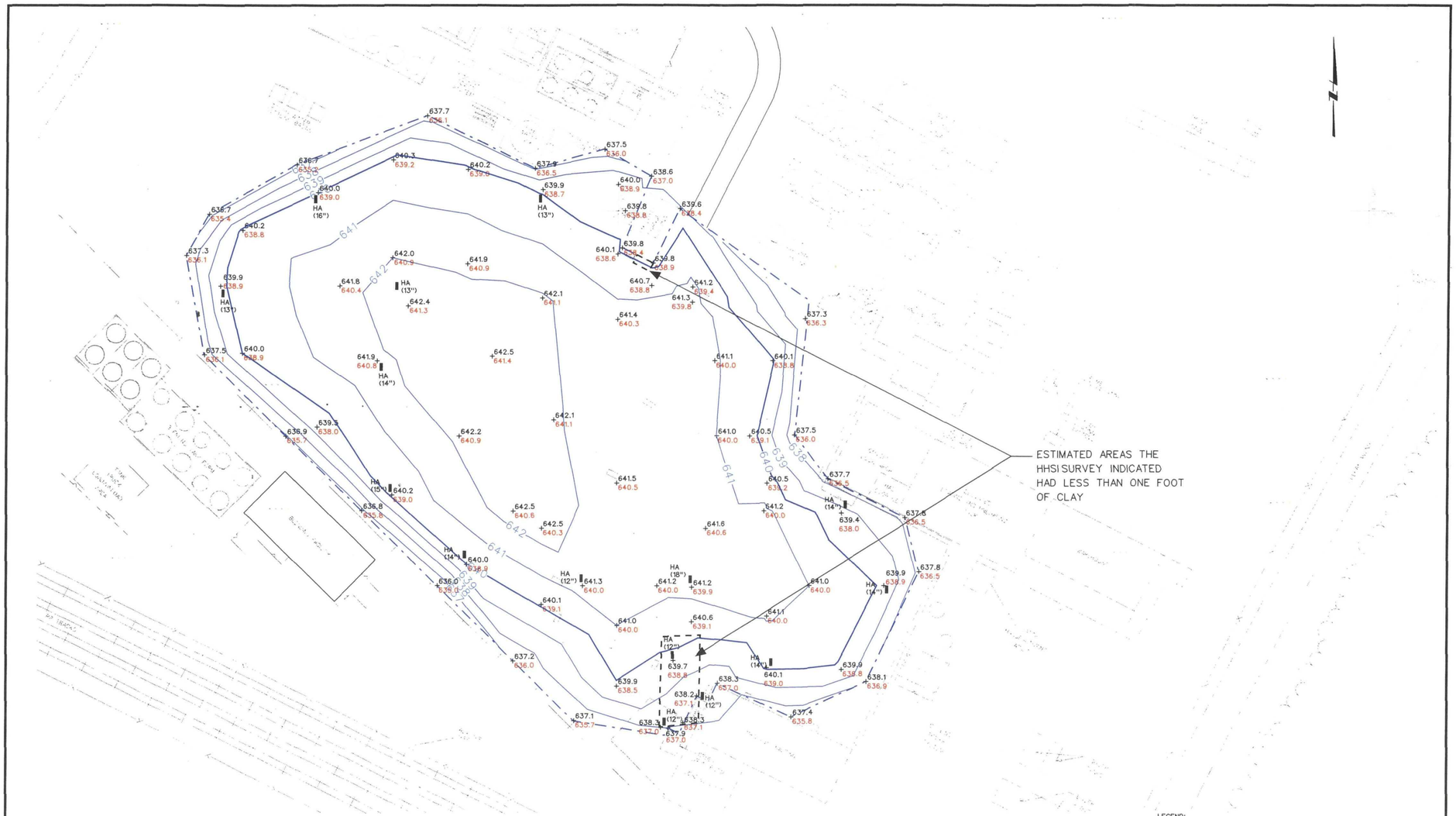
GRIFFITH, INDIANA

STILL BOTTOMS POND AREA INTERIM COVER CCR
CONVEYANCE PIPING LAYOUT

FIGURE 3



ESTIMATED AREAS THE HHSI SURVEY INDICATED HAD LESS THAN ONE FOOT OF CLAY

LEGEND:

- 641 — TOP OF CLAY COVER CONTOUR
- CAP BOUNDARY FROM DESIGN
- 637.23 / 636.02 — SURVEYED TOP OF CLAY ELEVATION (11/12/02) / SURVEYED TOP OF SUBBASE ELEVATION (9/19/02)
- HA (12") — HAND AUGER LOCATION AND THE MEASURED CLAY THICKNESS IN INCHES

REV	DATE	BY	DESCRIPTION

SCALE: 1"=30'

WARNING: 0 ½ 1 — IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

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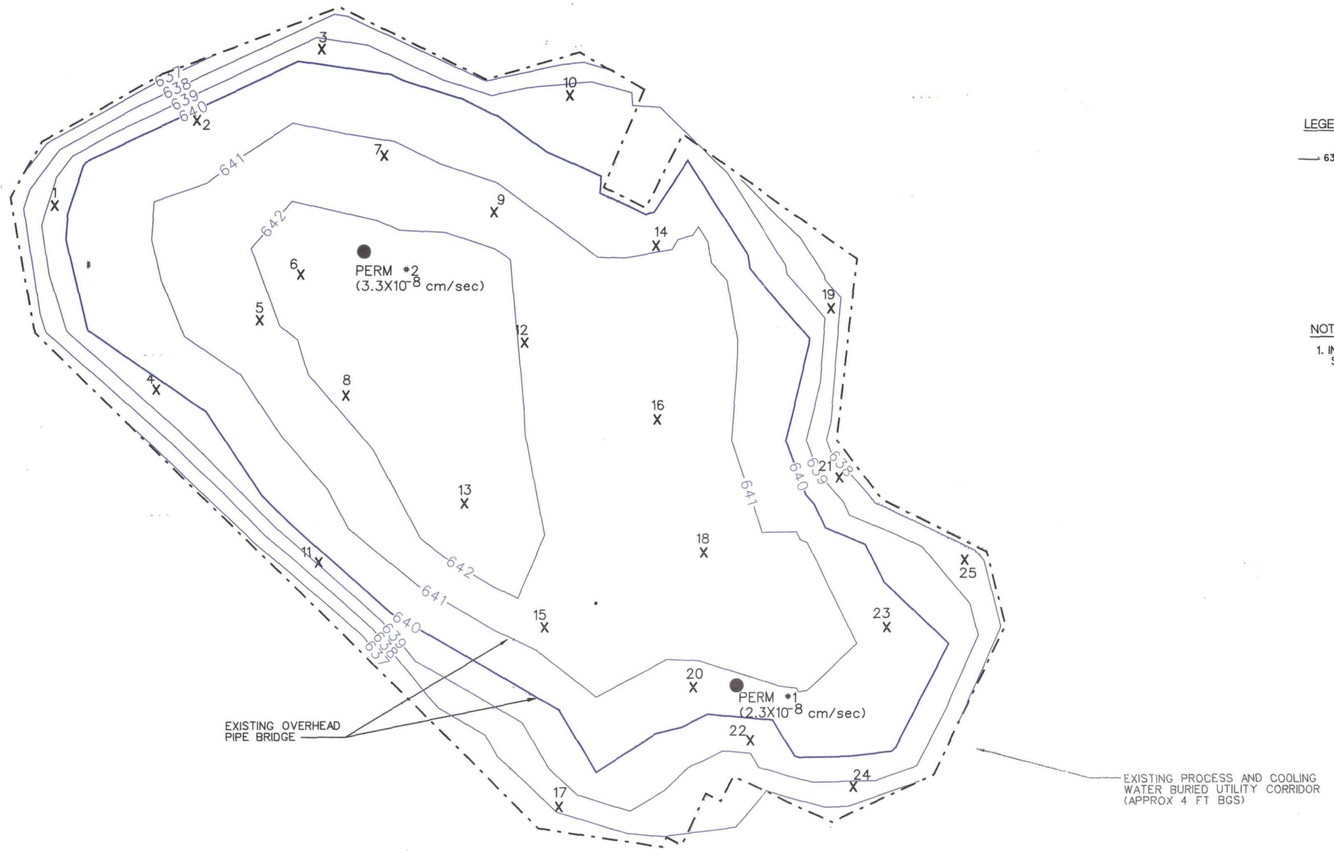
GRIFFITH, INDIANA

STILL BOTTOMS POND AREA INTERIM COVER CCR

TOP OF CLAY CONTOURS

FIGURE 4

Job No: MW Job # File: J:/209/0601 ACS/0120/MWDWGs/top of clay.DGN Plot Date: 17-FEB-2004 8?:53



LEGEND:

639 — TOP OF CLAY CONTOUR

19 X — IN PLACE DENSITY TEST LOCATION AND IDENTIFIER

● — IN PLACE PERMIBILITY TEST COLLECTED FEB. 28, 2003

NOTE:

1. IN PLACE CLAY DENSITY RESULTS ARE SUMMERIZED IN TABLE 1 OF SBPA INTERIM ENGINEERED COVER CCR.

REV	DATE	BY	DESCRIPTION

SCALE 1"=30'

WARNING 0 ½ 1 IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

DESIGNED CAD
DRAWN MWH
CHECKED

SUBMITTED BY
(PROJECT MANAGER) LICENSE NO. DATE
(COMPANY OFFICER) LICENSE NO. DATE

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GRIFFITH, INDIANA

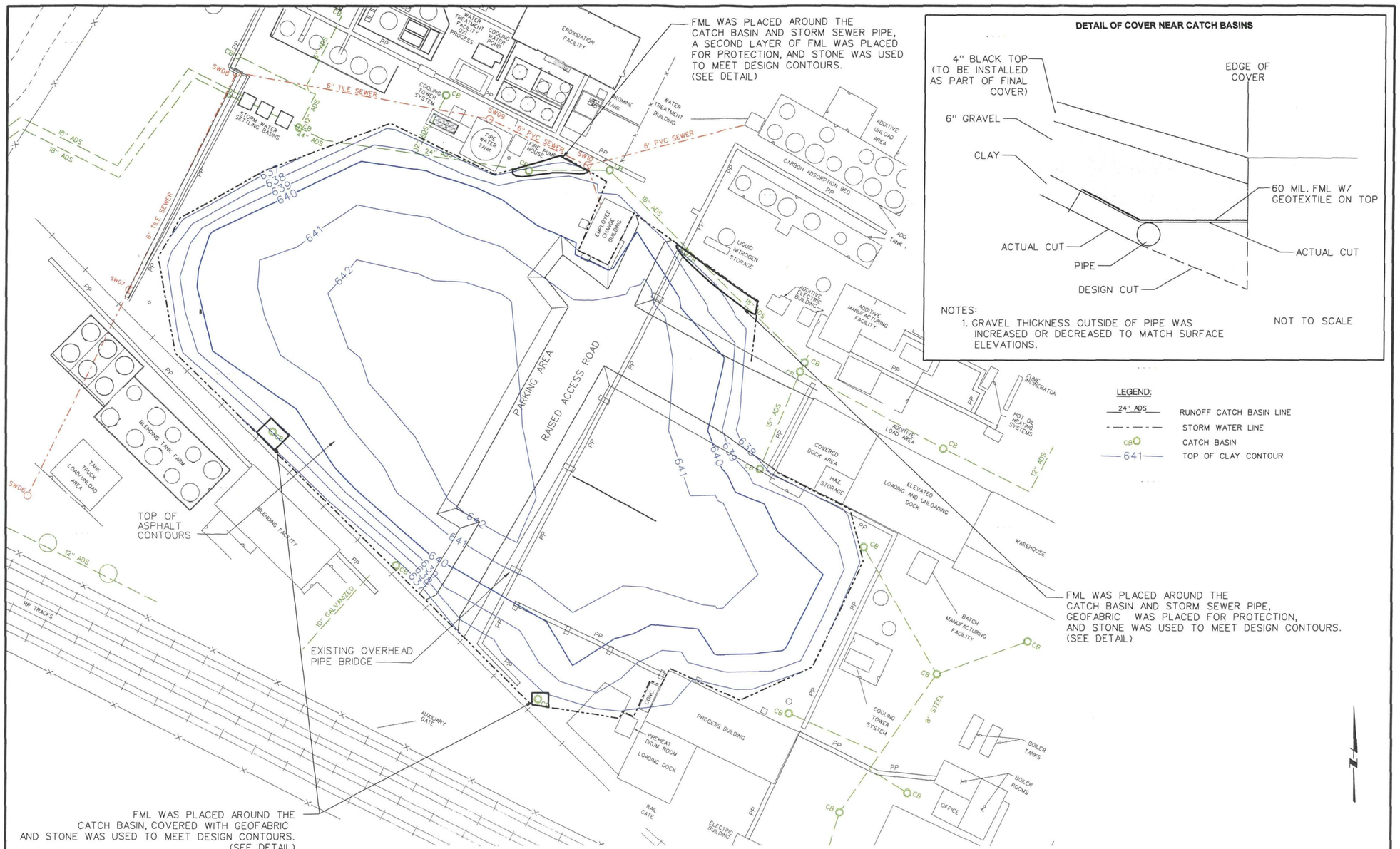
STILL BOTTOMS POND AREA INTERIM COVER CCR

COMPACTION TEST LOCATIONS

FIGURE 5

Plot Date: 14-JUL-2003 11:58

File: J:\2091\0801 ACS\0120\MWDWGs\INTERIM-C-04_c.DGN



REV	DATE	BY	DESCRIPTION

SCALE	1"=30'
WARNING	0 ½ 1 IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE
DESIGNED	CAD
DRAWN	MWH
CHECKED	
SUBMITTED BY	(PROJECT MANAGER) LICENSE NO. DATE
	(COMPANY OFFICER) LICENSE NO. DATE

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AMERICAN CHEMICAL SERVICE SUPERFUND SITE
GRIFFITH, INDIANA

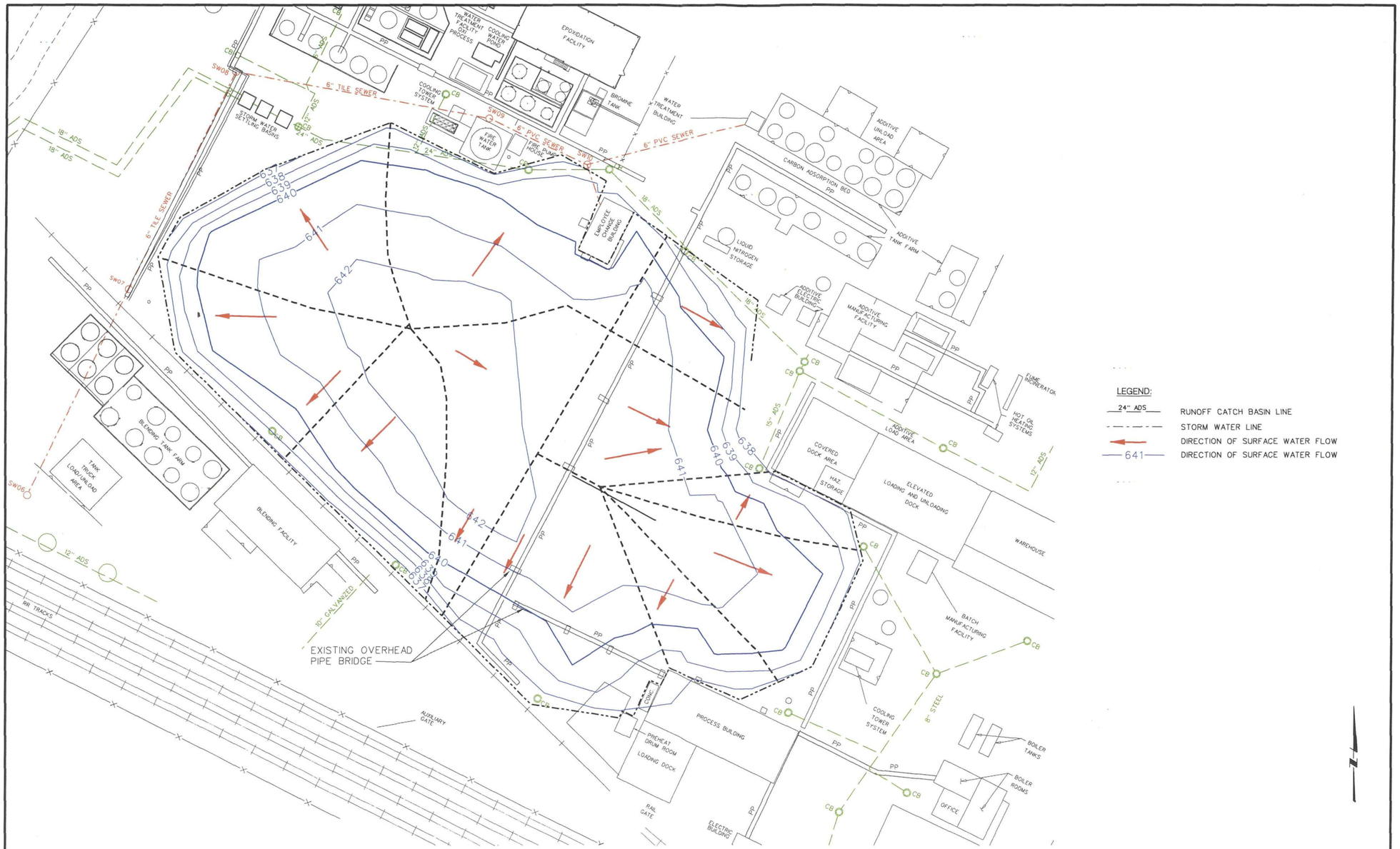
STILL BOTTOMS POND AREA INTERIM COVER CCR

CATCH BASIN DETAILS

FIGURE 6

Plot Date: $$$$Date$$$$ $$Time$$$

File: J:/209/0601.ACS/0120/MWDWGs/stormwater drainage.DGN



REV	DATE	BY	DESCRIPTION

SCALE 1"=30'

WARNING 0 ½ 1 IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

DESIGNED CAD
DRAWN MWH
CHECKED

SUBMITTED BY
(PROJECT MANAGER) LICENSE NO. DATE
(COMPANY OFFICER) LICENSE NO. DATE

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AMERICAN CHEMICAL SERVICE SUPERFUND SITE
GRIFFITH, INDIANA

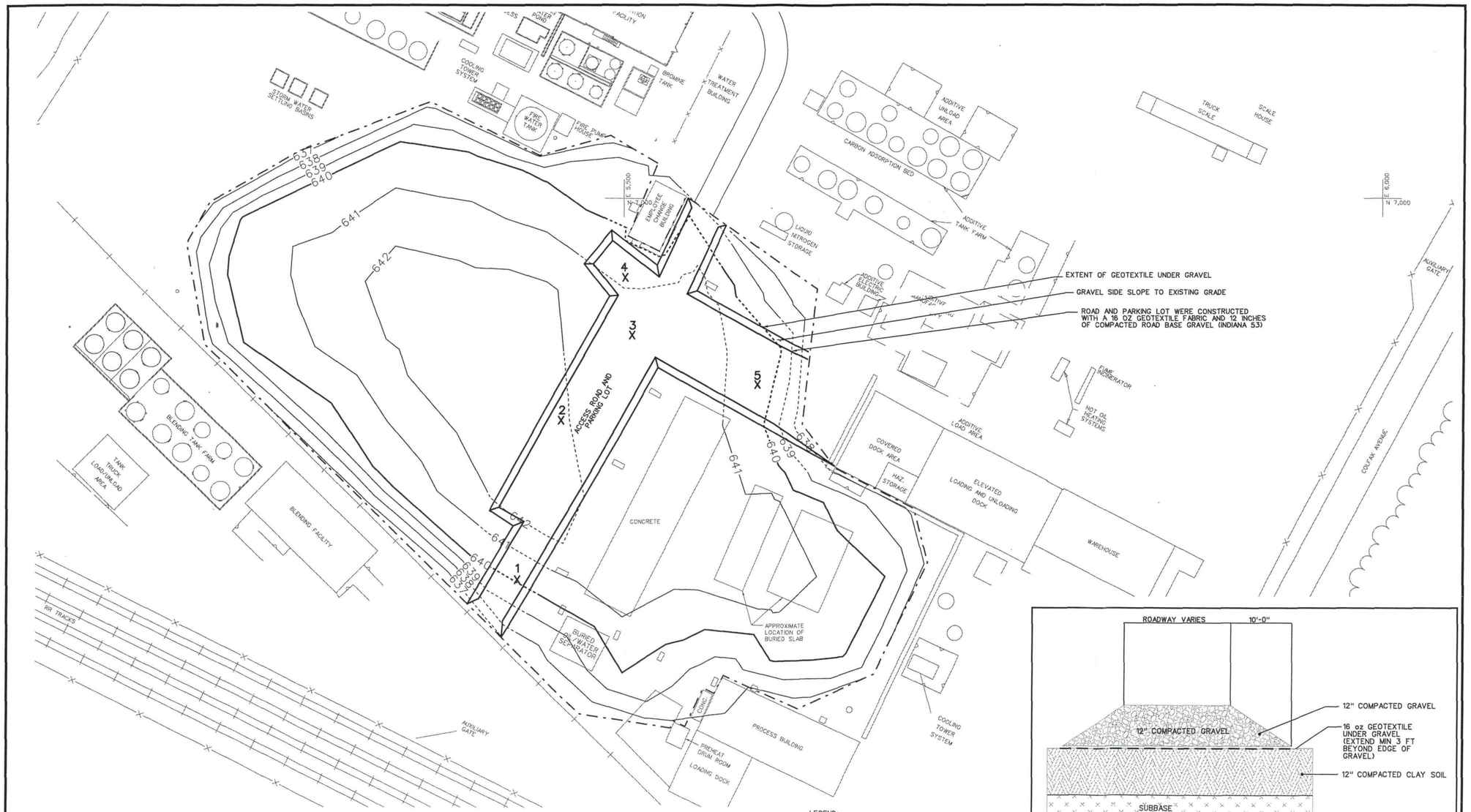
STILL BOTTOMS POND AREA INTERIM COVER CCR

SITE DRAINAGE PATTERN

FIGURE 7

Plot Date: $$$$date$$$$ $$time$$

File: J:/2109/0601 ACS/0120/MWDWGs/stormwater drainage_2.DGN



LEGEND:

—641— TOP OF CLAY COVER CONTOUR (11-12-02)

- - - - CAP BOUNDARY FROM DESIGN

1X GRAVEL COMPACTION TEST LOCATION

NOTE: IN- PLACE GRAVEL DENSITY RESULTS ARE SUMMARIZED IN TABLE 1.

RAISED ACCESS ROAD (INTERIM COVER)
NOT TO SCALE

REV	DATE	BY	DESCRIPTION

SCALE 1"=30'

WARNING 0 ½ 1 IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

DESIGNED CAD
DRAWN MWH
CHECKED

SUBMITTED BY
(PROJECT MANAGER) LICENSE NO. DATE
(COMPANY OFFICER) LICENSE NO. DATE

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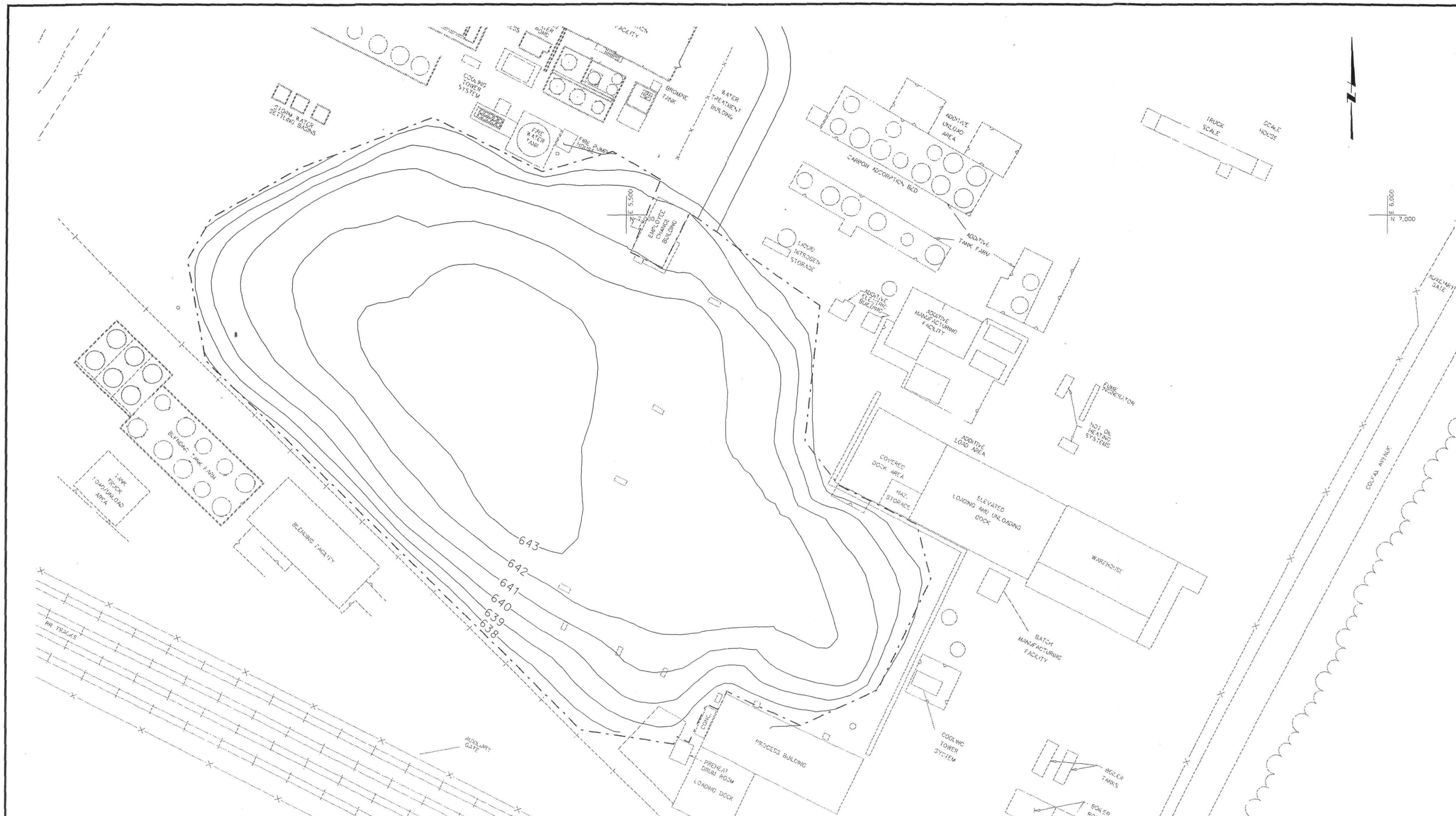
STILL BOTTOMS POND AREA INTERIM COVER CCR
ACCESS ROAD AND PARKING AREA

FIGURE 8

Job No: MW Job # File: J:/209/0601 ACS/0120/MWDWGs/Access Road and Parking.DGN Plot Date: 05-MAY-2003 14:49



LEGEND:

—641—	TOP OF CLAY COVER CONTOUR
- · — · —	CAP BOUNDARY FROM DESIGN

REV	DATE	BY	DESCRIPTION

SCALE 1"=30'

WARNING: 0 ½ 1 — IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

DESIGNED CAD
DRAWN MWH
CHECKED

SUBMITTED BY
(PROJECT MANAGER) LICENSE NO. DATE
(COMPANY OFFICER) LICENSE NO. DATE

MWH

ACS RD/RA GROUP
AMERICAN CHEMICAL SERVICE SUPERFUND SITE
GRIFFITH, INDIANA

STILL BOTTOMS POND AREA INTERIM COVER CCR

TOP OF GRAVEL CONTOURS

FIGURE 9

Job No: MW JOB # File: J:/209/0601 ACS/0120/MWDWGs/top of gravel.DGN Plot Date: 11-SEP-2003 11:32

APPENDIX A

Chronological Summary of Construction Activities

CHRONOLOGICAL SUMMARY OF CONSTRUCTION ACTIVITIES

This section summarizes the Site activities related to the installation of the interim engineered cover in the Still Bottoms Pond Area. Photographs summarizing Site activities are included in Appendix B.

Week of August 26, 2002
Security Fencing began installing the temporary fence around the SBPA work area.

Week of September 9, 2002
HHSI began mobilizing equipment to the site and holds kickoff and health and safety meetings. Area Survey staked out the cover area extents and elevations. HHSI began grading the subbase at the perimeter of the site.

Week of September 16, 2002
HHSI continued grading the subbase. Area Survey staked out the clay layer elevations.

Week of September 23, 2002
HHSI completed grading the subbase. HHSI began excavating the conveyance pipe trenches, welding the pipe runs, and pressure testing the pipe.

Week of September 30, 2002
HHSI completed welding and installing the eight-inch HDPE pipe. The pipe was pressure tested at 50 psi for 30 minutes because the gaskets on the pressure coupling would not hold any pressure over 60 pounds per square inch (psi) during operation. HHSI continued to trench and install the three-inch perimeter pipe. Several drum carcasses and other debris were encountered during trenching near the ACS breakroom building. The excavated material was placed beneath the existing subgrade on the west end of the site.

Week of October 7, 2002
HHSI completed installing and pressure testing the three-inch perimeter conveyance pipe. Placement and compaction of the first six-inch clay lift began on the west side of the site. In-place compaction testing was performed daily.

Week of October 14, 2002
HHSI continued to place and compact the first six-inch clay lift across the site. Sections of FML were placed over the areas where shallow storm water pipes would not allow for adequate clay thickness and/or compaction. Compaction testing was performed daily.

Week of October 21, 2002
HHSI completed placing the first and second six-inch clay lifts across the entire site. Compaction testing was performed daily. Testing indicted that several areas of the second lift on the east edge of the site required reworking.

Week of October 28, 2002
HHSI reworked deficient clay areas to meet the compaction requirements.

Week of November 4, 2002
HHSI constructed the access road and parking area on site which consisted of geofabric and 12 inches of Indian 53 stone.

Week of November 11, 2002
Great Lakes performs in-place compaction testing on the access road and parking area. All tests pass.

Week of May 5, 2003
Midwest Environmental Inc. (MEI) begins placement of the geotextile layer and the gravel layer across the SBPA cover area.

Week of May 12, 2003
MEI continues placement of the geotextile layer and the gravel layer across the SBPA cover area.

Week of May 19, 2003
MEI completes placement of the geotextile layer and the gravel layer across the SBPA cover area.

APPENDIX B

Photographs

1. September 2002 (Looking Northeast): Preparing the subbase material for the placement of clay.

2. September 2002 (Looking East): Installing piping from the GWTP to the On-Site Area.

3. September 2002 (Looking Southwest): Air monitoring being performed during intrusive work.

4. September 2002 (Looking North): Welding pipe sections.

5. September 2002: Pressure testing conveyance lines. Each line maintained 90 psi +/-2% for 15 minutes.

6. October 2002 (Looking North): Drum carcasses and debris encountered on the Northeast edge of the cover area.

7. October 2002 (Looking East): Installing the first 6" lift of clay.

8. October 2002 (Looking East): Installing the second 6" lift of clay.

9. November 2002 (Looking Northwest): Compacting clay around ACS buildings and other structures.

10. November 2002 (Looking Southwest): Stormwater catchbasin and pipe after placement of FML, bentonite seal, geofabric, and stone.

11. November 2002 (Looking Northwest): Placing the geotextile material.

12. November 2002 (Looking West): Placement of the gravel access road.

APPENDIX C

Geotechnical Laboratory and Field Testing Results

Test Results
ACS-SBPA

Prepared for:
Hard Hat Services, Inc.
Mr. John McDonough
1701 Quincy Ave., Suite 29
Naperville, IL 60540

Great Lakes Soil & Environmental Consultants, Inc.
333 Shore Drive
Burr Ridge, IL 60527

Great Lakes Soil & Environmental Consultants Inc.

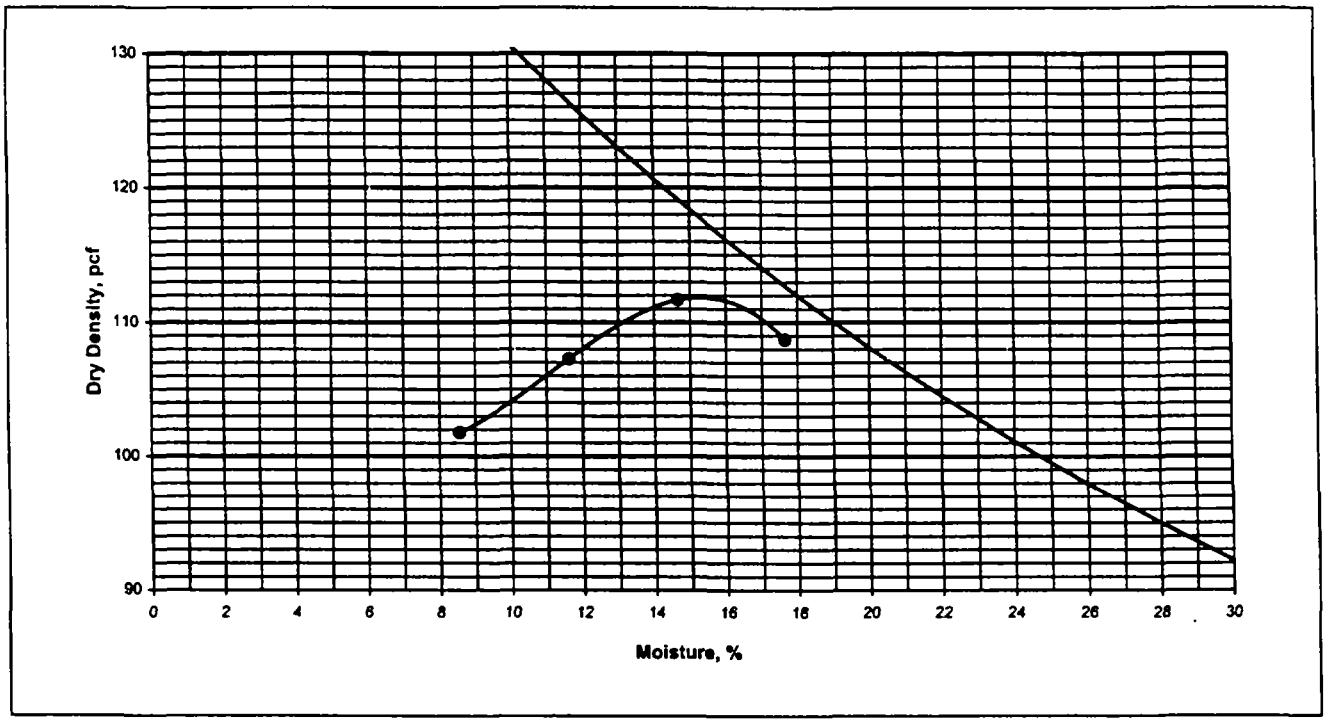
333 Shore Drive, Burr Ridge, IL 60521 Ph: (630) 321-0944 Fax: (630) 321-0945

MOISTURE - DENSITY RELATIONSHIP CURVE

ASTM D698-91

Project	ACS-SBPA						
Client	Hard Hat Services, Inc. 1701 Quincy Ave, Suite 29, Naperville, IL 60540 Attn.: Mr. John McDonough						
File No.	2490	**Sample #**	BS-1	**Date Tested**	9/4/2002	**Tested By**	MC
						Qc By	NP

Date Sample Recd.	9/3/02								
Sample Location	Stockpile								
Sample Description	Light Brown Silty Clay								
Type of Proctor	Standard	**Method:**	A	**Mold Size, in.**	4	**Hammer Weight, lb.**	5.5	**Drop, in.**	12
No. of Layers	3	**No. of Blows per Layer**		25					



Zero Air Void Curve Specific Gravity: 2.65

Results

Maximum Dry Density, pcf	112.0	**Optimum Moisture Content, %**	15.0	**Natural Moisture Content, %**	6.6

Remarks

Great Lakes Soil & Environmental Consultants, Inc. 3317 Washington St., Lansing, IL 60438. Ph: (708) 474-8860 Fax: (708) 474-7790	SPECIFIC GRAVITY ASTM D 854

Project	ACS-SBPA								
Client	Hard Hat Services, Inc. 1701 Quincy Ave., Ste. 29, Naperville, IL 60540, Attn: John McDonough								
File No.	2490	**Date**	9/12/02	**Date Recd.**	9/3/2002	**Tested by:**	NP	**QC by:**	SB

Sample Location	Stockpile
Sample Description	Light Brown Silty Clay
Sample ID	BS-1

Test No.	1			
Vol. Of Flask @ 20^0c	250.0			
Method of air removal[1]	Vacuum			
Mass fl.+ water+soil=M_{bws}	424.30			
Temperature, ^0C	20.0			
Mass fl.+water[2] = M_{bw}	360.87			
Dish No.	G			
Mass dish + dry soil	450.5			
Mass of dish	352.2			
Mass of dry soil = M_s	98.30			
$M_w = M_s+M_{bw}-M_{bws}$	34.87			
$\alpha = \rho_t/\rho 20^0$c	0.99823			
$G_s = \alpha M_s/M_w$	2.81			
Average Specific Gravity =	**2.81**			

Remarks:	M_{bw} is the mass of the flask filled with water at same temp. +/- 1^0c as for M_{bws} or value from
calibration curve at T of M_{bws}	

	Great Lakes Soil & Environmental Consultants, Inc. 333 Shore Drive, Burr Ridge, IL 60527 Ph.: (630) 321-0944 Fax: (630) 321-0945	**PERCENT FINES** **ASTM D1140**

Project	ACS-SBPA						
Client	Hard Hat Services, Inc. 1701 Quincy Ave, Suite 29, Naperville, IL 60540 Attn.: Mr. John McDonough						
File No.	2490	Date	9/12/2002	Sample #	BS-1	Tested By	MC

Source of Material	Stock pile
Description of Soil	Light Brown Silty Clay

Control Sieve No.	=	# 200
Weight of empty pan, gm.	=	119.1
Weight of pan + dry sample , gms	=	684.2
Weight of pan + dry sample after washing	=	186.1
Percent fines, %	=	**88.14**

Remarks	

Great Lakes Soil & Environmental Consultants, Inc
333 Shore Drive, Burr Ridge, IL 60521 Ph: (630) 321-0944 Fax: (630) 321-0945

COEFFICIENT OF PERMEABILITY - ASTM D5084 (FLEXIBLE WALL)

Project	ACS-SBPA						
Client	Hard Hat Services, Inc. 1701 Quincy Ave, Suite 29, Naperville, IL 60540 Attn.: Mr. John McDonough						
File #	2490	**Date Tested**	9/9/2002	**Tested by:**	AK	**QC by:**	SB
Sample ID:	BS-1 (95%-OPT)	Date Recd.	9/3/02	**Location**			
Sample Description	Light Brown Silty Clay						

Specimen Data

Initial

Diameter:	7.10	cm	Area, A:	39.6	sq cm
Height, L:	5.20	cm	Volume, V:	205.9	cu cm
Mass of Sample:	402.6	g	**Moisture Content:**	**15.0**	**%**
			Wet Density	**122.0**	**pcf**
			Dry Density	**106.1**	**pcf**

Final

Diameter:	7.03	cm	Area, A:	38.8	sq cm
Height, L:	5.21	cm	Volume, V:	202.2	cu cm
Mass of Sample:	412.80	g	**Moisture Content:**	**22.2**	**%**
			Wet Density	**127.4**	**pcf**
			Dry Density	**104.3**	**pcf**
			Deg of Saturation	**94.4**	

Test Data

Permeant:	De-aired Tap Water
Cell Pressure	80.0 psi
Top Pressure	75.0 psi
Bottom Pressure	76.1 psi
Gradient:	14.9

Date	Time	Elapsed Time (Sec)	Cumulative Time (Sec)	Burette Readings		Outflow/Inflow Ratio	Fluid Temp. oC	Permeability cm/sec
				Outflow cc	Inflow cc			
9/9/2002	9:20 AM	0	0	3.54	5.47		20.0	—
9/9/2002	9:45 AM	1500	1500	3.74	5.26	1.0	20.0	2.05E-07
9/9/2002	10:15 AM	1800	3300	3.94	5.05	1.0	20.0	1.77E-07
9/9/2002	10:45 AM	1800	5100	4.11	4.85	0.9	20.0	1.74E-07
9/9/2002	11:15 AM	1800	6900	4.27	4.69	1.0	20.0	1.43E-07

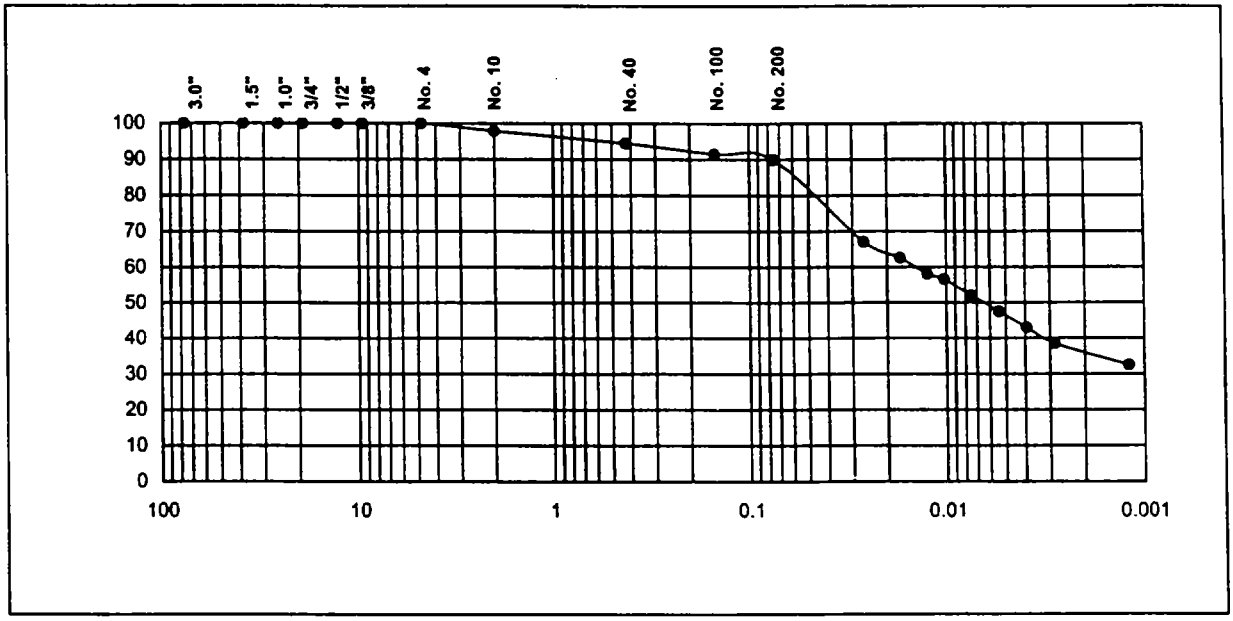
Average Permeability = **1.7E-07** cm/sec

Remarks:

Great Lakes Soil & Environmental Consultants, Inc. 333 Shore Drive, Burr Ridge, IL 60521 Ph: (630) 321-0944 Fax: (630) 321-0945	GRAIN SIZE ANALYSIS (ASTM D422)

Project	ACS-SBPA						
Client	Hard Hat Services, Inc. 1701 Quincy Ave, Suite 29, Naperville, IL 60540 Attn.: Mr. John McDonough						
File No.	2490	**Sample #**	BS-1	**Date Tested**	9/4/2002	**Tested by**	MC
						Qc by	NP

Date Sample Received:	9/3/02
Sample Location	Stockpile
Sample Description	Light Brown Silty Clay



% + 3"	% Gravel	% Sand	% Silt	% Clay
0.0	0.0	10.1	43.8	46.1

Sieve Size	Percent Passing
3.0"	100.0
1.5"	100.0
1.0"	100.0
3/4"	100.0
1/2"	100.0
3/8"	100.0
No. 4	100.0
No. 10	97.9
No. 40	94.5
No. 100	91.5
No. 200	89.9

Liquid Limit, L_L	Plastic Limit, PL	Plasticity Index, PI
31	17	14

Soil Classification:	CL
Soil Description:	Lean Clay
System:	USCS

Remarks:

Great Lakes Soil & Environmental Consultants, Inc.

333 Shore Drive, Burr Ridge, IL 60521 Ph.: (630) 321-0944 Fax: (630) 321-0945

Field Density Test Report (Nuclear Density Test)

Page

ACS - Griffith Montgomery Watson

Project:	~~Touhy Avenue Reservoir~~, Chicago - O'Hare International Airport, Chicago, Illinois				
Client:	Mr. Eric Borgman, Alfred Benesch & Company 205 North Michigan Avenue, Boulevard Towers South, Chicago, IL 60601			Specification, % PR:	95.00
File No.	2405	Report No.	Max. Density PCF	Specification, % M:	Optimum +/- 3.0%
Date:	8/10/02	Gauge Serial No.	Optimum Moisture Content %		
Type of Equipment Used for Compaction:					

Test Number	Retest Ref. No.	Location of Test	Elevation/ Lift No.	Soil Description	Probe Depth (inches)	Wet Density (pcf)	Dry Density (pcf)	Moisture (%)	Proctor (pcf)	% Compaction	Pass Fail
(1)		test strip, ~~south~~ west end	(13)		6		113.2	15.5	115	96.5	P
(2)		test strip, ~~south~~ west end					107.4	16.6		91.0	F
3		4ft					116.0	10.4		98.3	F
4		8					112.9	12.8		95.6	F
5		8					108.1	15.6		91.6	F
6		13					111.8	14.5		94.7	F
7		13					113.4	14.0		96.1	F
8		13					110.2	15.3		93.4	F
9		8 after add'l compaction					110.6	16.5		93.7	F
10		8 " " "					108.2	17.3		91.7	F
11		8 3ft south					109.1	13.5		92.4	F
12		13 after add'l compaction			↓		106.7	16.5	↓	90.4	F

Tested By:

Remarks:

Great Lakes Soil & Environmental Consultants, Inc.

333 Shore Drive, Burr Ridge, IL 60521 Ph.: (630) 321-0944 Fax: (630) 321-0945

Field Density Test Report (Nuclear Density Test)

Project: ACS, Griffith, IN
Client:
File No. 2147
Date: 10/11/02
Specification: 95% @ 15% +2
Type of Equipment Used for Compaction: Sheepsfoot Compaction

Test Number	Retest Ref. No.	Location of Test	Elevation/ Lift No.	Soil Decsription	Probe Depth (inches)	Wet Density (pcf)	Dry Density (pcf)	Moisture (%)	Proctor (pcf)	% Compaction	Pass Fail
1		#8	LIFT#1	Brown Silty clay	8.0		105.9	17.8	112.0	94.6	F
2		#8					109.5	16.0		97.7	P
3		#5					109.6	15.3		97.8	P
4		#13					116.1	13.6		103.7	F
5		#6					110.6	15.1		98.8	P
6		#12					111.7	12.8		99.7	F
7		#7					106.4	14.7		95.0	F
8		#9					102.7	15.6		91.7	F
9		#7					105.3	17.4		94.0	F
10		#7					107.6	16.4		96.1	P
11		#9					107.9	16.9		96.3	P
12		#10					108.9	16.6		97.3	P
13		#11					111.8	13.1		99.8	F

Tested By:

Remarks:

Great Lakes Soil & Environmental Consultants, Inc.
333 Shore Drive, Burr Ridge, IL 60527 Ph.: (630) 321-0944 Fax: (630) 321-0945

Field Density Test Report (Nuclear Density Test)

Project:	ACS Superfund Site						
Client:	MWH						
File No.	2147	Report No.		Max. Density PCF	112.0	Specification, % PR:	95%
Date:	10/11/07	Gauge Serial No.		Optimum Moisture Content %		Specification, % M:	+2% (15 - 17%)
Type of Equipment Used for Compaction:	Sheepsfoot Roller						

Test Number	Retest Ref. No.	Location of Test	Elevation/ Lift No.	Soil Description	Probe Depth (Inches)	Wet Density (pcf)	Dry Density (pcf)	Moisture (%)	Proctor (pcf)	% Compaction	Pass Fail
1		11	Lift #1	Brown Silty Clay	12		106.6	18.7	112.0	95.2	Fail
2		4	"	" "	6		108.7	16.3	112.0	97.1	PASS
3	1	11	"	" "	6		108.1	15.8	112.0	96.5	PASS
4		13	"	" "	6		116.5	14.2	112.0	104.1	FAIL
5	4	13	"	" "	6		116.2	14.0	112.0	103.8	FAIL
6	4	13	"	" "	6		115.1	15.8	112.0	102.8	PASS
7		12	"	" "	6		104.2	13.3	112.0	93.1	FAIL
8	7	12	"	" "	6		107.0	16.8	112.0	95.6	PASS
9		14	"	" "	6		107.5	15.7	112.0	96.0	PASS
10		3	"	" "	6		105.7	13.8	112.0	94.4	FAIL (See
11		2	"	" "	6		105.5	18.0	112.0	94.2	FAIL (Remark

Tested By: Harold Smith

Remarks:
Test Reference Numbers (10 & 11) Locations (3,2) were determined to be within limits that were not yet completed on site. Retest should be done at next testing frequency.

Great Lakes Soil & Environmental Consultants, Inc.

333 Shore Drive, Burr Ridge, IL 60527 Ph:(630) 321-0944 Fax:(630) 321-0945

Field Density Test Report (Nuclear Density Test)

Project:	ACS
Client	
File No.	2147
Date:	10/15/02
Tester:	Lueck
Specification:	95.0 % of Modified Proctor Density
Equipment Used for Compaction	
Gauge Serial No.	26995

Test Number	Retest Ref. No.	Location/Description	North Coordinate or Station	East Coordinate or Offset	Elevation (ft)	Soil Description	Probe Depth (Inches)	Wet Density (pcf)	Dry Density (pcf)	Moisture (pcf)	Moisture (%)	Proctor (pcf)	% Compaction	Pass Fail
1		3				brn clay	6		114.5	15.6	13.6	112.0	102.3	
	1	3					6		110.2	17.2	15.6		98.4	
	2	3							111.5	15.0	13.4		99.8	
[illegible]	3	3						123.0	104.3	18.7	17.9		93.1	
2		2						120.7	108.4	12.7	11.7		96.4	
	1	2						129.0	112.7	16.3	14.5		100.6	
3		1						120.4	104.5	15.7	15.0		93.5	
4		15				↓	↓		103.9	17.0	16.4		92.8	
5		3 after rompit & recompact.						121.0	102.4	18.6	18.1		91.4	
6		2 " " "						127.1	110.2	16.9	15.4		98.4	(P)
7		1 " " "						126.5	111.0	16.6	14.8		99.1	(P)
	1	1 " " "						123.8	105.4	18.4	17.5		94.1	
	2	1 " " "						129.0	112.2	16.9	15.0		100.2	(P)
8		3 after add'l compact.						123.5	104.9	18.6	17.7		93.7	
9		3 5ft downslope				↓	↓	127.0	110.1	16.4	15.3	↓	98.3	(P)

Comments:

LFT# = Lift number placed

F.G = Final Grade

Great Lakes Soil & Environmental Consultants, Inc.

333 Shore Drive, Burr Ridge, IL 60527 Ph.: (630) 321-0944 Fax: (630) 321-0945

Field Density Test Report (Nuclear Density Test)

Project:	ACS Superfund site						
Client:	NIWH						
File No.	2147	Report No.		Max. Density PCF		Specification, % PR:	95% of STD
Date:	10/21/02	Gauge Serial No.		Optimum Moisture Content %		Specification, % M:	
Type of Equipment Used for Compaction:		Sheepsfoot roller					

Test Number	Retest Ref. No.	Location of Test	Elevation/ Lift No.	Soil Description	Probe Depth (Inches)	Wet Density (pcf)	Dry Density (pcf)	Moisture (%)	Proctor (pcf)	% Compaction	Pass Fail
(1)		Preliminary Test		Brown silty clay	6	-	113.1	16.7	112.0	100.9	PASS
(2)		Preliminary Test		"	6	-	114.4	15.2	↓	102.1	PASS

Tested By: TLB

Remarks:

Great Lakes Soil & Environmental Consultants, Inc.

333 Shore Drive, Burr Ridge, IL 60527 Ph:(630) 321-0944 Fax:(630) 321-0945

Field Density Test Report (Nuclear Density Test)

Project:	ACS - Griffith
Client	Montgomery Watson
File No.	2147
Date:	10/21/02
Tester:	Lucic
Specification:	95.0 % of Modified Proctor Density +15-17% moisture
Equipment Used for Compaction	
Gauge Serial No.	26785

Test Number	Retest Ref. No.	Location/Description	North Coordinate or Station	East Coordinate or Offset	Elevation (ft)	Soil Description	Probe Depth (Inches)	Wet Density (pcf)	Dry Density (pcf)	Moisture (pcf)	Moisture (%)	Proctor (pcf)	% Compaction	Pass Fail
1		15					6	126.3	108.6	17.7	16.3	112.0	97.0	P
2		16						124.5	111.5	13.0	11.7		99.5	F
3		16 - 5 Ft N						125.7	111.7	14.0	12.5		99.7	F
4		19						130.9	113.5	17.3	15.2		101.4	P
5		21						131.0	114.8	16.2	14.1		102.5	F
6		22 - 2 Ft NW						130.1	110.7	19.4	17.5		98.9	F F
	#1	" " "						130.5	110.2	20.2	18.4		98.4	F
7		25						124.7	107.9	16.8	15.6		96.3	P
8		23						127.3	109.9	17.4	15.8		98.1	P
9		18						126.3	112.7	13.6	12.0		100.7	F
10		21 - after add' compaction						130.2	113.0	17.2	15.2		100.9	P
11		16						128.9	111.8	17.1	15.3		99.8	P
12		24						132.4	115.7	18.0	15.8		103.3	P
13		22						123.8	107.5	16.9	15.5		96.0	P
14		17						120.5	106.5	17.6	17.1		95.1	F F

Comments:
LFT# = Lift number placed
F.G = Final Grade

Great Lakes Soil & Environmental Consultants, Inc.

333 Shore Drive, Burr Ridge, IL 60527 Ph:(630) 321-0944 Fax:(630) 321-0945

Field Density Test Report (Nuclear Density Test)

Project:	ACS - Griffith
Client	Montgomery Watson
File No.	2147
Date:	10/22/02
Tester:	Lucek
Specification:	95.0 % of Modified Proctor Density
Equipment Used for Compaction	
Gauge Serial No.	26995

Test Number	Retest Ref. No.	Location/Description	North Coordinate or Station	East Coordinate or Offset	Elevation (ft)	Soil Description	Probe Depth (inches)	Wet Density (pcf)	Dry Density (pcf)	Moisture (pcf)	Moisture (%)	Proctor (pcf)	% Compaction	Pass Fail
1		17					6	133.2	115.5	17.7	15.3	112.0	103.2	P
2		20						124.9	107.6	17.3	16.1		96.0	P
3		18						125.5	110.0	15.5	14.1		98.2	F
4		18 - 4Ft SE						132.8	116.2	16.6	14.2		103.8	F
5		18 - 5Ft SW						~~113.5~~ 113.6	113.6	17.9	15.7		101.4	P
6		3B (2nd LIFT)						126.6	109.7	16.9	15.4		97.7	P
7		10B						128.4	108.2	20.1	18.6		96.6	F
8		1B						128.5	108.1	20.4	18.9		96.5	F
9		1B after add'l compaction						129.0	110.7	18.3	16.6		98.8	P
8		10B " "	"					125.6	106.9	—	17.4		95.5	F
9		10B ~9Ft S												
10		10B ~ 5Ft SW						127.3	108.7	18.5	17.0		97.1	P
11		2B						128.0	109.9	18.2	16.5		98.1	P
12		7B						130.2	112.5	17.8	15.8		100.4	P
13		6B						131.3	111.6	19.7	17.6		99.7	F
14		4B					↓	131.0	112.5	18.5	16.5	↓	100.4	P

Comments:

LFT# = Lift number placed

F.G = Final Grade

Great Lakes Soil & Environmental Consultants, Inc.

333 Shore Drive, Burr Ridge, IL 60527 Ph:(630) 321-0944 Fax:(630) 321-0945

Field Density Test Report (Nuclear Density Test)

Project:	ACS-Griffith				
Client	Montgomery Watson				
File No.	2447				
Date:	10/22/01				
Tester:	Lueck			Gauge Serial No.	
Specification:	95.0 % of Modified Proctor Density	Equipment Used for Compaction			

Test Number	Retest Ref. No.	Location/Description	North Coordinate or Station	East Coordinate or Offset	Elevation (ft)	Soil Description	Probe Depth (inches)	Wet Density (pcf)	Dry Density (pcf)	Moisture (pcf)	Moisture (%)	Proctor (pcf)	% Compaction	Pass Fail
15		6B					6		119.3	—	14.3	112.0	106.5	F
16		6B- 4Ft SW					1	129.6	109.3	20.2	18.5	1	97.6	F
													—	

Comments:

LFT# = Lift number placed

F.G = Final Grade

Great Lakes Soil & Environmental Consultants, Inc.
333 Shore Drive, Burr Ridge, IL 60527 Ph:(630) 321-0944 Fax:(630) 321-0945

Field Density Test Report (Nuclear Density Test)

Project:	ACS - Gr. Rf. R				
Client	Montgomery Watson				
File No.	2147				
Date:	10/23/02				
Tester:	Lwick				
Specification:	95.0 % of Modified Proctor Density	Equipment Used for Compaction		Gauge Serial No.	26745

Test Number	Retest Ref. No.	Location/Description	North Coordinate or Station	East Coordinate or Offset	Elevation (ft)	Soil Description	Probe Depth (inches)	Wet Density (pcf)	Dry Density (pcf)	Moisture (pcf)	Moisture (%)	Proctor (pcf)	% Compaction	Pass Fail
1		6B *					6	127.3	109.1	18.2	16.6	112.0	97.4	P
2		5B					1	130.0	112.1	18.0	16.0	1	100.1	P

*B = 2nd 1 ft

Comments:

LFT# = Lift number placed

F.G = Final Grade

Great Lakes Soil & Environmental Consultants, Inc.

333 Shore Drive, Burr Ridge, IL 60527 Ph:(630) 321-0944 Fax:(630) 321-0945

Field Density Test Report (Nuclear Density Test)

Project:	ACS - Griffith
Client	Montgomery Watson
File No.	2147
Date:	10/24/02
Tester:	Lueck
Specification:	95.0 % of Modified Proctor Density
Equipment Used for Compaction	
Gauge Serial No.	26775

Test Number	Retest Ref. No.	Location/Description	North Coordinate or Station	East Coordinate or Offset	Elevation (ft)	Soil Description	Probe Depth (inches)	Wet Density (pcf)	Dry Density (pcf)	Moisture (pcf)	Moisture (%)	Proctor (pcf)	% Compaction	Pass Fail
1		14B*					6			16.3	13.9	112.0		
1	1	14B						132.4	115.2	17.2	15.4		102.8	P
2		9B						130.9	112.8	18.2	16.1		100.7	F.G.
3		12B						132.4	116.0	16.5	14.2		103.5	F
4		12B - 4Ft SW						—	112.4	16.5	14.6		100.4	F
4	1	12B						129.2	111.7	17.5	15.7		99.8	P
5		8B						131.1	113.3	~~15.8~~ 17.8	15.5		101.1	F LFT
6		19B						128.6	110.1	18.5	16.8		98.3	P
Pre-1		under pipe bridge						127.3	111.2	16.5	14.9		99.3	
Pre-2		east end						131.5	—	18.9	16.8		100.5	
7		11B									high			
8		11B - 7Ft N						130.0	111.2	18.7	16.8		99.3	P
9		13B						130.7	113.1	17.6	15.6		101.0	F
~~10~~		~~13B - 5Ft NE~~												
10		21B						129.1	111.1	18.0	16.2		99.2	P
11		25B					↓	127.0	109.9	17.1	15.6	↓	98.1	P

*B = 2nd 1 Ft

sand cone

Comments:	sand cone test was done at location 8B.

LFT# = Lift number placed

F.G = Final Grade

Great Lakes Soil & Environmental Consultants, Inc.

333 Shore Drive, Burr Ridge, IL 60527 Ph:(630) 321-0944 Fax:(630) 321-0945

Field Density Test Report (Nuclear Density Test)

Project:	GCS-Cardinal
Client	Montgomery Watson
File No.	2147
Date:	10/24/02
Tester:	Lueck
Specification:	95.0 % of Modified Proctor Density
Equipment Used for Compaction	
Gauge Serial No.	26995

Test Number	Retest Ref. No.	Location/Description	North Coordinate or Station	East Coordinate or Offset	Elevation (ft)	Soil Description	Probe Depth (inches)	Wet Density (pcf)	Dry Density (pcf)	Moisture (pcf)	Moisture (%)	Proctor (pcf)	% Compaction	Pass Fail
12		23B					6	127.0	109.8	17.1	15.6	112.0	98.1	(P)
13		24B						130.7	113.3	17.4	15.4		101.1	(P)
14		22B						128.6	110.3	18.3	16.5		98.5	(P)
~~15~~		18B												
~~16~~ 15		16B						126.6	109.5	17.1	15.6		97.8	(P)
16		18B						130.4	112.6	17.8	15.5		100.6	(P)

Comments:

LFT# = Lift number placed

F.G = Final Grade

Great Lakes Soil & Environmental Consultants, Inc.

333 Shore Drive, Burr Ridge, IL 60527 Ph:(630) 321-0944 Fax:(630) 321-0945

Field Density Test Report (Nuclear Density Test)

Project:	A.I.S - Griffith
Client	Montgomery Watson
File No.	2143
Date:	10/28/02
Tester:	LUECK
Specification:	95.0 % of Modified Proctor Density
Equipment Used for Compaction	
Gauge Serial No.	26995

Test Number	Retest Ref. No.	Location/Description	North Coordinate or Station	East Coordinate or Offset	Elevation (ft)	Soil Description	Probe Depth (Inches)	Wet Density (pcf)	Dry Density (pcf)	Moisture (pcf)	Moisture (%)	Proctor (pcf)	% Compaction	Pass Fail
1		20 B					6	126.6	107.2	19.4	18.1	112.0	95.7	F
—	1	20 B					↓	126.4	108.7	17.7	16.3	↓	97.0	(F)
2		15 B					↓	130.0	112.8	17.1	15.2	↓	100.7	(P)
3		17 B					↓	129.3	111.7	17.6	15.8	↓	99.7	(P)

Comments: sand one foot @ 15B

LFT# = Lift number placed

F.G = Final Grade

Great Lakes Soil & Environmental Consultants, Inc. 333 Shore Drive, Burr Ridge, IL 60521 Ph: (630) 321-0944 Fax: (630) 321-0945	Sand Cone Test Report

Project:	ACS Superfund site						
Client:	Montgomery Watson Harza, 2775 Diehl Road, Ste. 300, Warrenville, IL 60555						
File No.:	2147	**Date:**	10/24/2002	**Rpt. No.:**		**Tech.**	LL

Location of Test	8B				
Nuclear Density Test No.	5	Proctor Value **(D)**	112.0	Opt. Moisture	15.0

Sample		**Volume**	
(1) Weight of Sample and Container, g	2630.6	(5) Weight of Jar & Sand before test, g	5741.0
(2) Weight of Container, g	8.8	(6) Weight of Jar & Sand after Test, g	2242.0
(1-2) Weight of Sample, g **(a)**	2621.8	(7) Weight of Sand in Funnel, g	1652.8

Moisture			
Can No.	30C		
Can Weight, g	30.99		
(3) Weight of Wet Sample + Can, grams	143.9		
(4) Weight of Dry Sample + Can, grams	126.4	(5-6-7) Weight of Sand in Hole, g **(d)**	1846.2
Weight of dry soil, g **(b)**	95.4	Weight per cubic foot of Sand, g/cc**(e)**	1.533
(3-4) Weight of Water, grams **(c)**	17.4	Sand Type	Silica Sand

		Sand Cone Calculation			**Nuclear Density Gauge Values**
Moisture Content	(c/b)*100	**(f)**	**18.3**	%	**15.8**
Volume	(d/e)	**(g)**	1204.3	cu cm	
Wet Density	(a/g)	**(h)**	2.18	g/cc	
Dry Density	h/(1+(f/100))		**1.84**	g/cc	
Dry Density		**(i)**	**114.9**	pcf	
Compaction	(i/D)*100		**102.6**	%	**101.1**

Remarks:	

Quality, Service & Commitment

Great Lakes Soil & Environmental Consultants, Inc.
333 Shore Drive, Burr Ridge, IL 60521 Ph: (630) 321-0944 Fax: (630) 321-0945

Sand Cone Test Report

Project:	ACS Superfund site						
Client:	Montgomery Watson Harza, 2775 Diehl Road, Ste. 300, Warrenville, IL 60555						
File No.:	2147	**Date:**	10/28/2002	**Rpt. No.:**		**Tech.**	LL

Location of Test	15B				
Nuclear Density Test No.	2	Proctor Value **(D)**	112.0	Opt. Moisture	15.0

Sample		**Volume**	
(1) Weight of Sample and Container, g	1483.9	(5) Weight of Jar & Sand before test, g	6486.0
(2) Weight of Container, g	8.6	(6) Weight of Jar & Sand after Test, g	3823.0
(1-2) Weight of Sample, g **(a)**	1475.3	(7) Weight of Sand in Funnel, g	1652.8

Moisture			
Can No.	51A		
Can Weight, g	30.2		
(3) Weight of Wet Sample + Can, grams	145.0		
(4) Weight of Dry Sample + Can, grams	127.0	(5-6-7) Weight of Sand in Hole, g **(d)**	1010.2
Weight of dry soil, g **(b)**	96.8	Weight per cubic foot of Sand, g/cc**(e)**	1.533
(3-4) Weight of Water, grams **(c)**	18.0	Sand Type	Silica Sand

		Sand Cone Calculation			**Nuclear Density Gauge Values**
Moisture Content	(c/b)*100	**(f)**	**18.6**	%	**15.2**
Volume	(d/e)	**(g)**	659.0	cu cm	
Wet Density	(a/g)	**(h)**	2.24	g/cc	
Dry Density	h/(1+(f/100))		**1.89**	g/cc	
Dry Density		**(i)**	**117.8**	pcf	
Compaction	(i/D)*100		**105.2**	%	**100.7**

Remarks:	

Quality, Service & Commitment

Great Lakes Soil & Environmental Consultants, Inc.

333 Shore Drive, Burr Ridge, IL 60521 Ph.: (630) 321-0944 Fax: (630) 321-0945

Field Density Test Report (Nuclear Density Test)

Project: American Chemical
Client: MWH
File No. 2205
Date: 11-12-02
Type of Equipment Used for Compaction: Roller
Specification: 90%

Test Number	Retest Ref. No.	Location of Test	Elevation/ Lift No.	Soil Description	Probe Depth (inches)	Wet Density (pcf)	Dry Density (pcf)	Moisture (%)	Proctor (pcf)	% Compaction	Pass Fail
1		Road Area South End	F.G.	Ind 53	8S	–	131.3	4.5	135.0	97.3	PASS
2		Center	"	"	"	–	122.5	3.8	"	90.8	"
3		N.E. side	"	"	"	–	121.5	5.0	"	90.0	"
4		N.W. side	"	"	"	–	122.0	6.2	"	90.4	"
5		North End	"	"	"	–	122.2	5.7	"	90.6	"

Tested By: [signature]

Reviewed:

Great Lakes Soil & Environmental Consultants Inc.

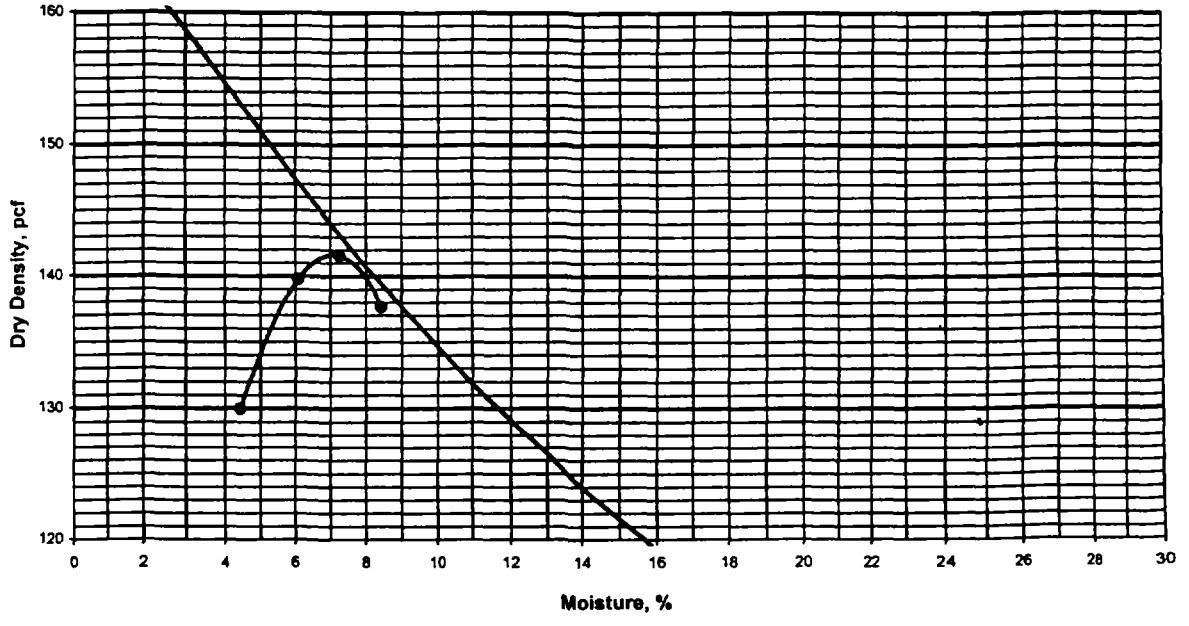
333 Shore Drive, Burr Ridge, IL 60521 Ph: (630) 321-0944 Fax: (630) 321-0945

MOISTURE - DENSITY RELATIONSHIP CURVE

ASTM D698-91

Project	ACS Superfund Site, Griffith, IN						
Client	Montgomery Watson Constructors, Inc. 2775 Diehl Road, Suite 300, Warrenville, IL 60555 Attn.: Mr. Tom Tinics						
File No.	2147	**Sample #**	BS#1	**Date Tested**	11/27/2002	**Tested By**	MC
						Qc By	SB

Date Sample Recd.	11/21/02								
Sample Location									
Sample Description	Gray crushed aggregate								
Type of Proctor	Standard	**Method:**	C	**Mold Size, in.**	6	**Hammer Weight, lb.**	5.5	**Drop, in.**	12
No. of Layers	3	**No. of Blows per Layer**		56					



Zero Air Void Curve Specific Gravity: 2.75

Results

Maximum Dry Density, pcf	**141.8**	**Optimum Moisture Content, %**	**7.0**	**Natural Moisture Content, %**	**8.3**
Corrected Max. Dry Density, pcf	**150.4**	**Corrected Optimum Moisture Content, %**	**8.2**		

Remarks

Great Lakes Soil & Environmental Consultants, Inc
333 Shore Drive, Burr Ridge, IL 60521 Ph: (630) 321-0944 Fax: (630) 321-0945

COEFFICIENT OF PERMEABILITY - ASTM D5084 (FLEXIBLE WALL)

Project	ACS Superfund Site, Griffith, IN						
Client	Montgomery Watson Constructors, Inc. 2775 Diehl Road, Suite 300, Warrenville, IL 60555 Attn.: Mr. Tom Tinics						
File #	2147	**Date Tested**		3/7/2003	**Tested by:**	NP	**QC by:** SB
Sample ID:	Perm# 2	Date Recd.	2/28/03	**Location**			
Sample Description	Brown silty clay w/ traces of gravel						

Specimen Data

Initial

Diameter:	7.13	cm	Area, A:	39.9	sq cm
Height, L:	7.10	cm	Volume, V:	283.5	cu cm
Mass of Sample:	618.8	g	**Moisture Content:**	**20.5**	**%**
			Wet Density	**136.2**	**pcf**
			Dry Density	**113.0**	**pcf**

Final

Diameter:	7.22	cm	Area, A:	40.9	sq cm
Height, L:	7.11	cm	Volume, V:	291.1	cu cm
Mass of Sample:	615.90	g	**Moisture Content:**	**18.3**	**%**
			Wet Density	**132.0**	**pcf**
			Dry Density	**111.6**	**pcf**
			Deg of Saturation	**93.6**	

Test Data

Permeant:	De-aired Tap Water
Cell Pressure	80.0 psi
Top Pressure	75.0 psi
Bottom Pressure	77.2 psi
Gradient:	21.8

Date	Time	Elapsed Time (Sec)	Cumulative Time (Sec)	Burette Readings		Outflow/Inflow Ratio	Fluid Temp. oC	Permeability cm/sec
				Outflow cc	Inflow cc			
3/7/2003	9:30 AM	0	0	3.03	5.95		20.0	---
3/7/2003	9:45 AM	900	900	3.32	5.63	0.9	20.0	3.65E-07
3/7/2003	10:00 AM	900	1800	3.58	5.33	0.9	20.0	3.51E-07
3/7/2003	10:15 AM	900	2700	3.84	5.06	1.0	20.0	3.23E-07
3/7/2003	10:30 AM	900	3600	4.08	4.82	1.0	20.0	2.93E-07

Average Permeability = **3.3E-07** cm/sec

Remarks:

Great Lakes Soil & Environmental Consultants, Inc
333 Shore Drive, Burr Ridge, IL 60521 Ph: (630) 321-0944 Fax: (630) 321-0945

COEFFICIENT OF PERMEABILITY - ASTM D5084 (FLEXIBLE WALL)

Project	ACS Superfund Site, Griffith, IN						
Client	Montgomery Watson Constructors, Inc. 2775 Diehl Road, Suite 300, Warrenville, IL 60555 Attn.: Mr. Tom Tinics						
File #	2147	**Date Tested**		3/7/2003	**Tested by:** NP	**QC by:**	SB
Sample ID:	Perm# 1	Date Recd.	2/28/03	**Location**			
Sample Description	Brown & Gray mottled silty clay w/ traces of gravel						

Specimen Data

Initial

Diameter:	7.12	cm	Area, A:	39.8	sq cm
Height, L:	6.16	cm	Volume, V:	245.3	cu cm
Mass of Sample:	544.8	g	**Moisture Content:**	17.6	%
			Wet Density	138.6	pcf
			Dry Density	117.8	pcf

Final

Diameter:	7.19	cm	Area, A:	40.6	sq cm
Height, L:	6.29	cm	Volume, V:	255.4	cu cm
Mass of Sample:	546.00	g	**Moisture Content:**	19.0	%
			Wet Density	133.4	pcf
			Dry Density	112.1	pcf
			Deg of Saturation	98.6	

Test Data

Permeant:	De-aired Tap Water
Cell Pressure	80.0 psi
Top Pressure	75.0 psi
Bottom Pressure	77.2 psi
Gradient:	25.1

Date	Time	Elapsed Time (Sec)	Cumulative Time (Sec)	Burette Readings		Outflow/Inflow Ratio	Fluid Temp. oC	Permeability cm/sec
				Outflow cc	Inflow cc			
3/7/2003	9:30 AM	0	0	2.96	5.97		20.0	---
3/7/2003	10:30 AM	3600	3600	3.04	5.87	0.8	20.0	2.45E-08
3/7/2003	11:30 AM	3600	7200	3.11	5.78	0.8	20.0	2.22E-08
3/7/2003	12:30 PM	3600	10800	3.20	5.68	0.9	20.0	2.49E-08
3/7/2003	1:30 PM	3600	14400	3.27	5.60	0.9	20.0	2.00E-08

Average Permeability = **2.3E-08** cm/sec

Remarks:

APPENDIX D

Pipe Manufacturer's Specifications

CPChem
PERFORMANCE PIPE

www.performancepipe.com

DRISCOPLEX™ PE 3408 HDPE Data Sheet

Typical Material Physical Properties of DRISCOPLEX™ HDPE High Density Polyethylene Material

Property		Unit	Test Procedure	Typical Value
Material Designation		—	PPI-TR4	PE 3408
Cell Classification		—	ASTM D-3350	345464C
Density	[3]	g/cm³	ASTM D-1505	0.955 (Black compounded material)
Melt Index	[4]	g/10 minutes	ASTM D-1238	0.1
Flexural Modulus	[5]	psi	ASTM D-790	>130,000
Tensile Strength	[4]	psi	ASTM D-638	3200
SCG (PENT)	[6]	Hours	ASTM F 1473	>100
HDB@73.4°F (23°C)	[4]	psi	ASTM D-2837	1600
Color; UV Stabilizer	[C]	—	—	Black with minimum 2% carbon black‡
Linear Thermal Expansion		inch/inch/°F	ASTM D-696	9×10^{-5}
Elastic Modulus		psi	ASTM D-638	110,000
Brittleness Temperature		°F (°C)	ASTM D-746	<-180 (<-118)
Hardness		Shore D	ASTM D-2240	65

NOTICE: This data sheet provides typical physical property information for polyethylene resins used to manufacture PERFORMANCE PIPE™ polyethylene piping products. It is intended for comparing polyethylene piping resins. It is not a product specification, and it does not establish minimum or maximum values or manufacturing tolerances for resins or for piping products. These typical physical property values were determined using compression-molded plaques prepared from resin. Values obtained from tests of specimens taken from piping products can vary from these typical values. Performance Pipe has made every reasonable effort to ensure the accuracy of this data sheet, but this data sheet may not provide all necessary information, particularly with respect to special or unusual applications. This data sheet may be changed from time to time without notice. Contact Performance Pipe to determine if you have the most recent edition.

August 2001 Supercedes all previous publications

DriscoPlex™ pipe and fittings may also be joined together or transitioned to other materials with flanges, mechanical connections that are designed for PE pipe, or electrofusion. These connections must be made in accordance with the connection manufacturer's instructions. Some connections such as mechanical OD compression couplings may require a stiffener in the pipe bore.

DriscoPlex™ piping products cannot be joined with adhesive or solvent cement. Threaded joining, and joining by hot air (hot gas), or extrusion welding techniques are not recommended for pressure service.

Installation

Observe safe handling and construction practices at all times. *Observe all applicable local, state, and federal codes and regulations, and all safety requirements specified by the owner, owner's representative or project engineer.*

DriscoPlex™ piping products for M & I applications may be directly buried, planted, directionally drilled, pulled-in, submerged, laid on the surface, or suspended. DriscoPlex™ pipes may also be used for rehabilitation by sliplining and various proprietary rehabilitation techniques. *Pull-in type installations (such as directional drilling, pull-in, sliplining, and various renewal techniques) are limited to butt-fused DriscoPlex™ PE 3408 pipes and the pulling force on the pipe should not be allowed to exceed the allowable tensile load (ATL) for the pipe (a weak link or break-away device at the pulling head is recommended). During the pull, both ends of the pull should be monitored for constant motion.*

Direct Burial

For subsurface installations, DriscoPlex™ pipe is installed using flexible pipe/soil system design practices. Flexible DriscoPlex™ pipe acts together with the embedment and the surrounding soil to support earthloads and live loads above the pipe, thus the selection of embedment soils and their placement around the pipe are very important. At normal burial depths, installation and embedment in accordance with ASTM D 2321 for non-pressure pipes, and ASTM D 2774 for pressure pipes is recommended. Special burial design may be required for greater depths and in special or unusual soil conditions. Burial design information may be found in the *Performance Pipe Engineering Manual.* DriscoPlex™ pipes may be buried to depths exceeding 100 feet.

DriscoPlex™ OD controlled pipes can be butt fused on the surface into long lengths, thus narrow trench widths and minimal open trench length can be used to save on installation costs. Lightweight DriscoPlex™ pipe and DriscoPlex™ 2000 Spirolite® pipe may be readily placed in the trench with common construction lifting equipment.

Depending upon DR and where fittings are not present in the bend, DriscoPlex™ OD controlled pipe may be cold-bent as tight as 20-40 times the pipe diameter, thus reducing or even eliminating the need for elbows at bends. If adequate space is not available for the bending radius, a fitting of the desired angle may be fused into the piping system to obtain the necessary change in direction. *Larger fabricated fittings require special care during handling and installation.* See the *Performance Pipe Engineering Manual.*

Plowing, Planting and Pull-In

Plowing and planting generally involve opening or cutting a narrow trench with a plow or a wheel or chain type trencher and feeding PE pipe directly over the trenching machine into the trench. Pipe is fed into the trench through a plow. See the Performance Pipe Engineering Manual for the minimum bend radius of the pipe feed plow chute. In pull-in, a narrow trench is opened and then a pipe string is pulled into the trench from one end. Plowing planting and pull-in are limited to suitable soils and open, unobstructed areas, but can be very cost effective.

June 2002 Supercedes all previous publications

APPENDIX E

Sand Supplier Certification Letter

563 W. 300 N.
VALPARAISO, IN 46385

DUNELAND SAND

(219) 759-SAND
(759-7263)

October 10, 2002

Keldorn Trucking, Inc.
3056 Lincoln Hwy.
Lynwood, IL 60411

Re: Virgin Material

Ken:

Please be advised that the material from Duneland Sand, Inc is 100% virgin sand. If you have any additional questions please feel free to contact me at 219-759-7263. Thank you.

Respectfully,

John C. Durachta-President
Duneland Sand, Incorporated

APPENDIX F

Geotextile Manufacturer's Specifications

TC Mirafi *TECHNICAL DATA SHEET*

Mirafi 1160N

Mirafi 1160N is a nonwoven geotextile composed of polypropylene fibers, which are formed into a stable network such that the fibers retain their relative position. 1160N is inert to biological degradation and resists naturally encountered chemicals, alkalis, and acids.

Mechanical Properties	Test Method	Unit	Minimum Average Roll Value	
			MD	CD
Grab Tensile Strength	ASTM D 4632	kN (lbs)	1.69 (380)	1.69 (380)
Grab Tensile Elongation	ASTM D 4632	%	50	50
Trapezoid Tear Strength	ASTM D 4533	kN (lbs)	0.62 (140)	0.62 (140)
Mullen Burst Strength	ASTM D 3786	kPa (psi)	5098 (740)	
Puncture Strength	ASTM D 4833	kN (lbs)	1.05 (235)	
Apparent Opening Size (AOS)	ASTM D 4751	mm (U.S. Sieve)	0.150 (100)	
Permittivity	ASTM D 4491	sec^{-1}	0.7	
Permeability	ASTM D 4491	cm/sec	0.22	
Flow Rate	ASTM D 4491	$l/min/m^2$ ($gal/min/ft^2$)	2037 (50)	
UV Resistance (at 500 hours)	ASTM D 4355	% strength retained	70	

Physical Properties	Test Method	Unit	Typical Value
Weight	ASTM D 5261	g/m^2 (oz/yd^2)	492 (14.5)
Thickness	ASTM D 5199	mm (mils)	3.8 (150)
Roll Dimensions (width x length)	–	m (ft)	4.5 x 45 (15 x 150)
Roll Area	–	m^2 (yd^2)	209 (250)
Estimated Roll Weight	–	kg (lb)	114 (251)

DISCLAIMER: TC Mirafi warrants our products to be free from defects in material and workmanship when delivered to TC Mirafi's customers and that our products meet our published specifications. Contact your local TC Mirafi Representative for detailed product specification and warranty information.

APPENDIX G

Daily Health and Safety Tailgate Meeting Logs

HARD HAT SERVICES, INC.
Engineering, Construction and Management Solutions

TAILGATE SAFETY MEETING

LOCATION: ACS Griffith IN DATE: 9/10/02

CONDUCTED BY: Dan Petrich OF: HHSI

SUBJECT: Heat, Heavy Equipment, PPE

NAME (printed)	ATTENDANCE SIGNATURE	COMPANY
Daniel Petrich	Dan Petrich	HHSI
Jesse Munsell	Jesse Munsell	Area Survey Co
James Treszka	James Treszka	"
Dave Drinnan	Dave Drinnan	Kildow.
John McSwain	John McSwain	HHSI
Don Spence	Don Spence	Kildow
Kent DeGraff	Kent DeGraff	Kildow

EMPLOYEE COMMENTS AND SUGGESTIONS

HARD HAT SERVICES, INC.
Engineering, Construction and Management Solutions

TAILGATE SAFETY MEETING

LOCATION: ACS Griffith IN DATE: 9/4/02

CONDUCTED BY: Dan Petrick OF: HHSE

SUBJECT: Dust, Heavy Equipment,

NAME (printed)	ATTENDANCE SIGNATURE	COMPANY
Daniel Petrick	Dan Petrick	HHSE
Doug Dickson	Doug Dickson	Keldon
Fred Doorn	Fred Doorn	Keldon
James Treszka	James Treszka	AREA
Jesse Munsell	Jesse Munsell	Area Survey Co.
Kent DeGraff	Kent DeGraff	Keldon

EMPLOYEE COMMENTS AND SUGGESTIONS

HARD HAT SERVICES, INC.
Engineering, Construction and Management Solutions

TAILGATE SAFETY MEETING

LOCATION: ACS DATE: 9/2/02

CONDUCTED BY: Dan Petrich OF:

SUBJECT: Contamination

NAME (printed)	ATTENDANCE SIGNATURE	COMPANY
Dan Petrich	[signature]	HHSI
Doug Deinman	[signature]	Kelborn
Kent DeGraff	Kent DeGraff	Kelborn
Fred Dearn	Fred Dearn	Kelborn

EMPLOYEE COMMENTS AND SUGGESTIONS

HARD HAT SERVICES, INC.
Engineering, Construction and Management Solutions

TAILGATE SAFETY MEETING

LOCATION: ACS DATE: 9/13

CONDUCTED BY: Dan Petrich OF: HHSI

SUBJECT: Utilities, Noise, Communication

NAME (printed)	ATTENDANCE SIGNATURE	COMPANY
Dan Petrich	[signature]	HHSI
DOUG DRINAN	[signature]	Keldorn
KENT DeGRAFF	[signature]	KELDORN
Fred Doorn	[signature]	Keldorn
[illegible]	TRAVIS KLINGENROTH	MWH
JAMES T TRESZKA	[signature]	AREA SURVEY
GARY BONAGUIDI	[signature]	AREA SURVEY

EMPLOYEE COMMENTS AND SUGGESTIONS

HARD HAT SERVICES, INC.
Engineering, Construction and Management Solutions

TAILGATE SAFETY MEETING

LOCATION: ACS DATE: 9/6/02

CONDUCTED BY: Dan Petrick OF: ______

SUBJECT: Slips trip + falls, Dehydration, Communication

NAME (printed)	ATTENDANCE SIGNATURE	COMPANY
Dan Petrick	[signature]	HHSI
KENT DE GRAFF	[signature]	KELDORN
Doug Deiman	[signature]	KELDORN
Fred Damon	[signature]	Keldorn
Travis Klingforth	[signature]	MWH

EMPLOYEE COMMENTS AND SUGGESTIONS

HARD HAT SERVICES, INC.

Engineering, Construction and Management Solutions

TAILGATE SAFETY MEETING

LOCATION: ACS DATE: 9/17/02

CONDUCTED BY: Dan Petrich OF:

SUBJECT: Contamination Down Wind, Heavy Equipment, Soft Spot for trucks

NAME (printed)	ATTENDANCE SIGNATURE	COMPANY
Dan Petrich		HHSI
Kent DeGraff		Kaldoran
[illegible]		Kaldoran
Dave Dickason		Kaldoran

EMPLOYEE COMMENTS AND SUGGESTIONS

HARD HAT SERVICES, INC.
Engineering, Construction and Management Solutions

TAILGATE SAFETY MEETING

LOCATION: ACS DATE: 9/16/02

CONDUCTED BY: Dan Petrick OF: HHSE

SUBJECT: Wet Conditions, Communications, Hospital Route

NAME (printed)	ATTENDANCE SIGNATURE	COMPANY
Dan Petrick		HHSE
Doug Drinnon		KS/DHEN
Kent DeGraff		Keldon
Fred Downs		Keldon

EMPLOYEE COMMENTS AND SUGGESTIONS

HARD HAT SERVICES, INC.

Engineering, Construction and Management Solutions

TAILGATE SAFETY MEETING

LOCATION: ACS DATE: 9/19/02

CONDUCTED BY: Dan Petrich OF: HHSI

SUBJECT: Slips trips + falls.

NAME (printed)	ATTENDANCE SIGNATURE	COMPANY
Dan Petrich		HHSI
GARY BONAGUIDI		AREA SURVEY CO.
JAMES TRESZKA		"
Fred Doan		Kaldon

EMPLOYEE COMMENTS AND SUGGESTIONS

HARD HAT SERVICES, INC.
Engineering, Construction and Management Solutions

TAILGATE SAFETY MEETING

LOCATION: ACS DATE: 9/20/02

CONDUCTED BY: Dan Petrick OF: HHSI

SUBJECT: PPE, Void holes South of Block Loads
Lighting

NAME (printed)	ATTENDANCE SIGNATURE	COMPANY
Dan Petrick	Dan Petrick	HHSI
GARY BONAGUIDI	Gary Bonaguidi	AREA SURVEY CO.
JAMES TTRESZKA	James TTreszka	"

EMPLOYEE COMMENTS AND SUGGESTIONS

HARD HAT SERVICES, INC.
Engineering, Construction and Management Solutions

TAILGATE SAFETY MEETING

LOCATION: ACS DATE: 9/27/02

CONDUCTED BY: Dan Petrich OF: HHST

SUBJECT: Underground Utilities, Contractors, Communication

NAME (printed)	ATTENDANCE SIGNATURE	COMPANY
Dan Petrich	Dan Petrich	HHST
Fred Dawn	Fred Dawn	Kaldan
JAMES TRESZIA	James Treszia	AREA
Jesse Munsell	Jesse Munsell	Area Surveyor
Tyson McCullough	Tyson McCullough	HHSI

EMPLOYEE COMMENTS AND SUGGESTIONS

HARD HAT SERVICES, INC.

Engineering, Construction and Management Solutions

TAILGATE SAFETY MEETING

LOCATION: ACS DATE: 9/24/02

CONDUCTED BY: Dan Petrich OF: HHSI

SUBJECT: Underground Utilities, trench hazards, Heavy equip

NAME (printed)	ATTENDANCE SIGNATURE	COMPANY
Dan Petrich		HHSI
~~Dan~~ Terrence Jones		HHSI
Mike Petrich		HHSI.
Fred Deem		Kal Deem
Tyron McCullough		HHSI

EMPLOYEE COMMENTS AND SUGGESTIONS

HARD HAT SERVICES, INC.
Engineering, Construction and Management Solutions

TAILGATE SAFETY MEETING

LOCATION: ACS DATE: 9/25/02

CONDUCTED BY: Dan Petrich OF: HHSI

SUBJECT: Upwind from Spoils + machine, machine hazards

NAME (printed)	ATTENDANCE SIGNATURE	COMPANY
Dan Petrich	Dan Petrich	HHSI
Mike Petrich	Mike Petrich	HHSI
Tyron McCullough	Tyron McCullough	HHSI
Terence Jones	Terence Jones	HHSI
Fred Doorn	Fred Doorn	Kel Doorn
Jesse Munsell	Jesse Munsell	Area Survey Co.
James Treszka	James Treszka	"

EMPLOYEE COMMENTS AND SUGGESTIONS

HARD HAT SERVICES, INC.
Engineering, Construction and Management Solutions

TAILGATE SAFETY MEETING

LOCATION: ACS DATE: 9/26/02

CONDUCTED BY: Dan Petrich OF: HHSI

SUBJECT: Trench Activities, Pressure in lines,

NAME (printed)	ATTENDANCE SIGNATURE	COMPANY
Dan Petrich		HHSI
Tyron McCullough		HHSI
Terrence Jones		HHSI
Mike Petrich		HHSI
Gary Bonaguidi		Area Survey Co.
James Ttaszka		"

EMPLOYEE COMMENTS AND SUGGESTIONS

HARD HAT SERVICES, INC.
Engineering, Construction and Management Solutions

TAILGATE SAFETY MEETING

LOCATION: ACS DATE: 9/27/02

CONDUCTED BY: Dan Petrich OF: HHST

SUBJECT: Proper Lifting, Power tools, Slips + trips

NAME (printed)	ATTENDANCE SIGNATURE	COMPANY
Dan Petrich		HHST
Tyron McCullough		"
Mike Petrich		"
Terrence Jones		"

EMPLOYEE COMMENTS AND SUGGESTIONS

HARD HAT SERVICES, INC.
Engineering, Construction and Management Solutions

TAILGATE SAFETY MEETING

LOCATION: ACS DATE: 9/30

CONDUCTED BY: Dan Petrich OF: HHSI

SUBJECT: Dehydration, Heavy Pipe, Heavy Equipment

NAME (printed)	ATTENDANCE SIGNATURE	COMPANY
Dan Petrich		HHSI
Mike Patrick		HASI
Terrence Jones		HASI
Tyron McGillvray H		HHSI

EMPLOYEE COMMENTS AND SUGGESTIONS

HARD HAT SERVICES, INC.
Engineering, Construction and Management Solutions

TAILGATE SAFETY MEETING

LOCATION: ACS DATE: 10/1

CONDUCTED BY: Dan Petrich OF: HHSI

SUBJECT: Heat Stress, Heavy lifting, Communication

NAME (printed)	ATTENDANCE SIGNATURE	COMPANY
Dan Petrich		HHSI
Tyron McCullough		HHSI
Mike Petrich		HHSI

EMPLOYEE COMMENTS AND SUGGESTIONS

HARD HAT SERVICES, INC.
Engineering, Construction and Management Solutions

TAILGATE SAFETY MEETING

LOCATION: ACS DATE: 10/2/02

CONDUCTED BY: Dan Petrich OF: HHSI

SUBJECT: Hot Mate, Trenching Hazards, Heavy equipment.

NAME (printed)	ATTENDANCE SIGNATURE	COMPANY
Dan Petrich		HHSI
Mike Petrich		HHSI
Tyron McCullough		HHSI
Terrence Jones		HHSI

EMPLOYEE COMMENTS AND SUGGESTIONS

HARD HAT SERVICES, INC.
Engineering, Construction and Management Solutions

TAILGATE SAFETY MEETING

LOCATION: ACS DATE: 10/3/02

CONDUCTED BY: Dan Petrich OF: HHSE

SUBJECT: Contaminate exposure, lighting, Trench hazards

NAME (printed)	ATTENDANCE SIGNATURE	COMPANY
Dan Petrich		HHSE
TERRENCE JONES		
Tyron McCullough		
MIKE PETRICH		
Jesse Munsell		Area Survey Co.
JAMES TRESZKA		IC

EMPLOYEE COMMENTS AND SUGGESTIONS

HARD HAT SERVICES, INC.
Engineering, Construction and Management Solutions

TAILGATE SAFETY MEETING

LOCATION: ACS DATE: 12/4/02

CONDUCTED BY: Dan Petrich OF: HHSI

SUBJECT: Lighting, Soft sides on trucks, slips, trips + falls

NAME (printed)	ATTENDANCE SIGNATURE	COMPANY
Dan Petrich	Dan Petrich	HHSI
Mike Petrich	Mike Petrich	HHSI
Terrence Jones	Terrence Jones	HHSI

EMPLOYEE COMMENTS AND SUGGESTIONS

HARD HAT SERVICES, INC.
Engineering, Construction and Management Solutions

TAILGATE SAFETY MEETING

LOCATION: ACS DATE: 10/4/02

CONDUCTED BY: Dan Petrich OF: HHSI

SUBJECT: Contamination exposure, unstable ground, Communication, Utilities

NAME (printed)	ATTENDANCE SIGNATURE	COMPANY
Dan Petrich	Dan Petrich	HHSI
Tyron McCullough		HHSI
Terrence Jones	Terrence Jones	HHSI
Mike Petrich	Mike Petrich	HHSI

EMPLOYEE COMMENTS AND SUGGESTIONS

HARD HAT SERVICES, INC.
Engineering, Construction and Management Solutions

TAILGATE SAFETY MEETING

LOCATION: AC5 DATE: 10/8/02

CONDUCTED BY: Dan Petrich OF: HHSI

SUBJECT: Utilities, unstable trench, contamination exposure, Communication

NAME (printed)	ATTENDANCE SIGNATURE	COMPANY
Dan Petrich	Dan Petrich	HHSI
Jesse Munsell	Jesse Munsell	Area Survey Co.
JAMES TTRESZKA	James T Treszka	"
Terrance Jones	Terrance Jones	HHSI
Tyron McCullough	Tyron McCullough	HHSI
Mike Petrich	Mike Petrich	HHSI

EMPLOYEE COMMENTS AND SUGGESTIONS

HARD HAT SERVICES, INC.
Engineering, Construction and Management Solutions

TAILGATE SAFETY MEETING

LOCATION: ACS DATE: 10/9/02

CONDUCTED BY: Dan Petrich OF: HHSI

SUBJECT: Truck traffic, Utilities, Heavy Equipment Communication

NAME (printed)	ATTENDANCE SIGNATURE	COMPANY
Dan Petrich		HHSI
Mike Petrich		HHSI
Terrence Jones		HHSI
Doug Drinnan		Kelowna/HHSI
Tyson McCullough		HHSI
Don Spence		Kelowna

EMPLOYEE COMMENTS AND SUGGESTIONS

HARD HAT SERVICES, INC.
Engineering, Construction and Management Solutions

TAILGATE SAFETY MEETING

LOCATION: ACS DATE: 10/10/02

CONDUCTED BY: Dan Petrich OF: HHSI

SUBJECT: Contamination exposure, Utilities, Dump on stable ground
Speed limit

NAME (printed)	ATTENDANCE SIGNATURE	COMPANY
Dan Petrich	[signature]	HHSI
Dave Duncan	[signature]	[illegible]
Tyron McCullough	[signature]	HHSI
Terrence Jones	[signature]	HHSI
Mike Petrich	[signature]	HHSI
Don Spencer	[signature] (Big Dog)	Keldon

EMPLOYEE COMMENTS AND SUGGESTIONS

HARD HAT SERVICES, INC.
Engineering, Construction and Management Solutions

TAILGATE SAFETY MEETING

LOCATION: ACS DATE: 10/11/02

CONDUCTED BY: Dan Petrick OF: HHSI

SUBJECT: Heavy equipment traffic, Dump truck speed limit, Foot traffic awareness

NAME (printed)	ATTENDANCE SIGNATURE	COMPANY
Dan Petrick	[signature]	HHSI
Tyron McCullough	[signature]	HHSI
Jesse Munsell	Jesse Munsell	Area Survey Co.
JAMES T TRESZKA	James T Treszka	"
DOUG DRINNAN	Doug Drinnan	Kalamn.
Don Spence	Don Spence	Keldan

EMPLOYEE COMMENTS AND SUGGESTIONS

HARD HAT SERVICES, INC.
Engineering, Construction and Management Solutions

TAILGATE SAFETY MEETING

LOCATION: ACS DATE: 10/14/02

CONDUCTED BY: Dan Petrich OF: HHSI

SUBJECT: Slips trips + falls, Heavy Equipment, lifting

NAME (printed)	ATTENDANCE SIGNATURE	COMPANY
Dan Petrich	[signature]	HHSI
Terrence Jones	[signature]	HHSI
Tyron McCullough	[signature]	HH SI
Dale Dickinson	[signature]	KB[illegible]
Don Spence	[signature]	"

EMPLOYEE COMMENTS AND SUGGESTIONS

HARD HAT SERVICES, INC.
Engineering, Construction and Management Solutions

TAILGATE SAFETY MEETING

LOCATION: ACS DATE: 10/15/02

CONDUCTED BY: Dan Petrich OF: HHSI

SUBJECT: Truck traffic, Communication, Heavy Equipment

NAME (printed)	ATTENDANCE SIGNATURE	COMPANY
Dan Petrich	[signature]	HHSI
Dave Denian	[signature]	Kseldman
Don Spence	[signature]	"

EMPLOYEE COMMENTS AND SUGGESTIONS

HARD HAT SERVICES, INC.

Engineering, Construction and Management Solutions

TAILGATE SAFETY MEETING

LOCATION: AC5 DATE: 10/16/02

CONDUCTED BY: Dan Petrich OF: HHSI

SUBJECT: Slippery wet clay, Heavy equipment

NAME (printed)	ATTENDANCE SIGNATURE	COMPANY
Dan Petrich		HHSI
KENT DEGRAFF		KELOWN
DOUG DRINNAN		KELOWN.
Don Spence		Kelown

EMPLOYEE COMMENTS AND SUGGESTIONS

HARD HAT SERVICES, INC.

Engineering, Construction and Management Solutions

TAILGATE SAFETY MEETING

LOCATION: ACS DATE: 10/17/02

CONDUCTED BY: Dan Petrich OF: HHSI

SUBJECT: Heavy Equipment, Slippery Clays, Foot traffic

NAME (printed)	ATTENDANCE SIGNATURE	COMPANY
Dan Petrich		HHSI
Kent DeGraff		Kelford
Fred Deere		Kelford
Doug Drennan		Kelford

EMPLOYEE COMMENTS AND SUGGESTIONS

HARD HAT SERVICES, INC.
Engineering, Construction and Management Solutions

TAILGATE SAFETY METING

TAILGATE SAFETY MEETING

LOCATION: ACS DATE: 10/18/02

CONDUCTED BY: Dan Petrich OF: HHSI

SUBJECT: Speed limit, Heavy equipment, Slips trips & falls

NAME (printed)	ATTENDANCE SIGNATURE	COMPANY
Dan Petrich	[signature]	HHSI
KENT DE GRAFF	[signature]	KELDORN
Fred Doran	[signature]	Keldorn
DALE MIRRAN	[signature]	Keldorn

EMPLOYEE COMMENTS AND SUGGESTIONS

HARD HAT SERVICES, INC.

Engineering, Construction and Management Solutions

TAILGATE SAFETY MEETING

LOCATION: ACS DATE: 10/21/02

CONDUCTED BY: Dan Petrich OF: HHSI

SUBJECT: Speed limit, Dump on Stable ground, Heavy Equipment

NAME (printed)	ATTENDANCE SIGNATURE	COMPANY
Dan Petrich		HHSI
Kent DeGroot		Kelowna
Doug Dorian		Kelowna
Don Spence		Kelowna

EMPLOYEE COMMENTS AND SUGGESTIONS

HARD HAT SERVICES, INC.
Engineering, Construction and Management Solutions

TAILGATE SAFETY MEETING

LOCATION: ACS DATE: 9/22/02

CONDUCTED BY: Dan Petrick OF: HHSI

SUBJECT: Overhead utilities, Speed limit, Communication

NAME (printed)	ATTENDANCE SIGNATURE	COMPANY
Dan Petrick		HHSI
Doug Brinnan		Kiewit
Don Spence		Kiewit

EMPLOYEE COMMENTS AND SUGGESTIONS

HARD HAT SERVICES, INC.
Engineering, Construction and Management Solutions

TAILGATE SAFETY MEETING

LOCATION: ACS DATE: 10/23/02

CONDUCTED BY: Dan Petrich OF: HHSI

SUBJECT: Heavy Equipment, Speed limit, Drive on stable ground

NAME (printed)	ATTENDANCE SIGNATURE	COMPANY
Dan Petrich	[signature]	HHSI
Jesse Munsell	[signature]	Area Survey Co.
JAMES TTRESZKA	[signature]	"
Doug Drinnan	[signature]	Keldorn
Dan Spencer	[signature]	"

EMPLOYEE COMMENTS AND SUGGESTIONS

HARD HAT SERVICES, INC.
Engineering, Construction and Management Solutions

TAILGATE SAFETY MEETING

LOCATION: ACS DATE: 10/24/02

CONDUCTED BY: Dan Petrich OF: HHSI

SUBJECT: Heavy Equipment, Overhead Utilities, Other Contractors

NAME (printed)	ATTENDANCE SIGNATURE	COMPANY
Dan Petrich	Dan Petrich	HHSI
Doug Dirnan		Kelborn
Don Spence		Kelborn

EMPLOYEE COMMENTS AND SUGGESTIONS

HARD HAT SERVICES, INC.

Engineering, Construction and Management Solutions

TAILGATE SAFETY MEETING

LOCATION: ACS DATE: 10/22/02

CONDUCTED BY: Dan Petrich OF: HHST

SUBJECT: Drill rig exposure, Slips + Trips

NAME (printed)	ATTENDANCE SIGNATURE	COMPANY
Dan Petrich	Dan Petrich	HHST
JAMES T TRESZKA	James T Treszka	AREA SURVEY CO.
Jesse Munsell	Jesse Munsell	Area Survey Co.

EMPLOYEE COMMENTS AND SUGGESTIONS

APPENDIX H

Daily Construction Logs and Air Monitoring Logs

HARD HAT SERVICES, INC.

Engineering, Construction and Management Solutions

DAILY CONSTRUCTION REPORT

DATE: 9/10/02

PROJECT: ACS
JOB NO:
CLIENT: MWH
PROJECT MANAGER: John McDonough

WEATHER Sunny
TEMP: 85°
HUMIDITY: 55°
WIND/DIR:

AVERAGE FIELD FORCE

Name of Subcontractor	Non-Manual	Manual	Remarks
Keldon Trucking			
Area Survey			

VISITORS:

Time	Name	Representing	Remarks

EQUIPMENT UTILIZED FOR WORK ACTIVITIES
UNUSUAL ITEMS
CONSTRUCTION ACTIVITIES

ACS Safety orientation meeting 9:00 Am
Construction kickoff Meeting 10:00 Am
Site Walk through 11:30
Began Site Layout (Area Survey)

DISTRIBUTION
1. Proj Mngr.
2. Field Office
3. File

By: _____ Title: _____

HARD HAT SERVICES, INC.

Engineering, Construction and Management Solutions

DAILY CONSTRUCTION REPORT

DATE: 9/14/02

PROJECT: ACS

JOB NO:

CLIENT: MCWH

PROJECT MANAGER: John McDonough

WEATHER

TEMP: 75° - 83°

HUMIDITY: 70%

WIND/DIR: NW - SE

AVERAGE FIELD FORCE

Name of Subcontractor	Non-Manual	Manual	Remarks
Kaldera Trucking		X	
Area Survey			

VISITORS:

Time	Name	Representing	Remarks

EQUIPMENT UTILIZED FOR WORK ACTIVITIES

Hitachi 200, Cat D5, Water truck

UNUSUAL ITEMS

ACS Crew Relocating Storm drain on Northwestern area of Site

CONSTRUCTION ACTIVITIES Site Layout, Cut Subgrade

8:00 am Calibrated P.I.D

8:30 am Began cut in Northeastern Section of Site

Ran P.I.D for 20 minutes doing spot checks on Soil and Breathing Zone Peak of 97.0 Avg of .08. Decided to upgrade to level C

10:00 Moment of Silence

10:30 P.I.D Readings around work Area (Breathing Zone) 8 minutes
Peak 57.0 ppm
Avg .3 ppm

11:05 P.I.D Leading Breathing Zone 7 minutes Peak 17.4 Avg .4 ppm

DISTRIBUTION
1. Proj Mngr.
2. Field Office
3. File

By: Dan Petrich Title: Supervisor

HARD HAT SERVICES, INC.

Engineering, Construction and Management Solutions

DAILY CONSTRUCTION REPORT

DATE: 9/11/02

PROJECT: ACS

JOB NO:

CLIENT: MWH

PROJECT MANAGER:

WEATHER

TEMP:

HUMIDITY:

WIND/DIR:

AVERAGE FIELD FORCE

Name of Subcontractor	Non-Manual	Manual	Remarks

VISITORS:

Time	Name	Representing	Remarks

EQUIPMENT UTILIZED FOR WORK ACTIVITIES

UNUSUAL ITEMS

CONSTRUCTION ACTIVITIES

11:15 Drums found in north east corner along drum Back Area
11:55 P.I.D Peak 41 Avg .7 7 minutes
12:15 lunch - 12:45
1:00 P.I.D Peak 7.1 Avg .2 9 minutes

DISTRIBUTION
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2. Field Office
3. File

PAGE __ of __ PAGES

By: Dan Petrich Title: Supervisor

DAILY AIR MONITORING LOG
ACS NPL SITE
Griffith, Indiana

Date: 9/11/02 Page 1 of 1

Site Activity: Cut, Grade, Survey

Monitoring Performed by: Dan Petrick Company Name: HHST

Time	Monitoring Location	Instrument	Reading (ppm)	Comments	
8:00	North West of Site	P.I.D	Calibration	Fresh Air	
8:30	North East Section of Site	P.I.D	.8 Avg 97 Peak	upgrade to Respirators	20 min
10:30	East Section of Site	P.I.D	3 Avg 57 Peak	Breathing Zone	8 min
11:05	East Section of Site	P.I.D	.4 Avg 17.4 Peak		7 min
11:55	East Section of Site	P.I.D	.7 Avg 41 Peak		7 min
1:00	South East Section	P.I.D	.2 Avg 7.1 Peak		9 min

HARD HAT SERVICES, INC.
Engineering, Construction and Management Solutions

DAILY CONSTRUCTION REPORT

DATE: 9/12/02

PROJECT: ACS
JOB NO:
CLIENT: MWH
PROJECT MANAGER: John McDonough

WEATHER Sunny
TEMP: 80°
HUMIDITY: 60%
WIND/DIR:

AVERAGE FIELD FORCE

Name of Subcontractor	Non-Manual	Manual	Remarks
Heldorn Trucking			

VISITORS:

Time	Name	Representing	Remarks

EQUIPMENT UTILIZED FOR WORK ACTIVITIES

4 Hitachi 200, Cat D5, Water truck

UNUSUAL ITEMS

Area Survey was not on Site All Day

CONSTRUCTION ACTIVITIES

7:10 TailGate meeting

7:30 P.I.D Readings Peak 11.21 Avg 20.1 Run time 12 minutes Breathing zone + Spot Soil checks material spread from previous day under 2ppm.

Excavated and graded east Side of Site.

10:00 Broke for Respitory fitness test

1:00pm Restarted Site activities

2:00 Pulled Drager tubes, South East Section — Trichlorethane-5 0ppm; Carbon Tetrachloride 0-5 ppm

3:30 stopped work

DISTRIBUTION
1. Proj Mngr.
2. Field Office
3. File

PAGE __ of __ PAGES

By: Dan Petrich Title: Supervisor

DAILY AIR MONITORING LOG
ACS NPL SITE
Griffith, Indiana

Date: 9/12/02	Page 1 of 1
Site Activity: Cut, Grade	
Monitoring Performed by: Dan Petrich	Company Name: HHSI

Time	Monitoring Location	Instrument	Reading (ppm)	Comments	
7:30	[redacted] East Section South	PID	20.1 Avg 1121 Peak	Breathing Zone + Spot checks on Soil	12 Min
2:00 pm	South East Section	Drager	0 PPm	Trichlorethene-5	
2:40	South East Section	Drager	1-5 ppm	Carbon Tetrachloride	
1:30 pm	South East Section	FID	1-7 Avg 77.5 Peak	Breathing Zone	6 min

HARD HAT SERVICES, INC.

Engineering, Construction and Management Solutions

DAILY CONSTRUCTION REPORT

DATE: 9/13/02

PROJECT: ACS
JOB NO:
CLIENT: MWH
PROJECT MANAGER: John McDonough

WEATHER Sunny
TEMP: 82°
HUMIDITY:
WIND/DIR: From SE

AVERAGE FIELD FORCE

Name of Subcontractor	Non-Manual	Manual	Remarks
Keleher - Trucking			
Area Survey			

VISITORS:

Time	Name	Representing	Remarks

EQUIPMENT UTILIZED FOR WORK ACTIVITIES

Hitachi 200, Cat D5, water truck

UNUSUAL ITEMS

CONSTRUCTION ACTIVITIES

7:00 Safety meeting
7:15 Start Cut + Grade
7:20 unload pipe
8:00 Area Survey meeting + Safety Tail Gate
Air Sample during Survey for scales as well as work zone for Cut + Grade.
8:30 Pipes found along south fence, east of gate. (unloaded) ACS notified (3 pipes
10:30 Talked with John McDonough in regards to moving the North perimeter South to Avoid Existing Sewer Structure and line.
9:00 Area Survey Spent around an hour marking MW Locations on west side of Rd.

DISTRIBUTION 1. Proj Mngr.
2. Field Office
3. File

PAGE __ of __ PAGES

By: [signature] Title: Supervisor

DAILY CONSTRUCTION REPORT
(Cont'd)

DATE: 9/13/02

CONSTRUCTION ACTIVITIES
11:45 lunch 12:30 Cut + Grade continued. Cut material from east side relocated to fire Pit Area on west side. (Dump Truck) Alex Sorvoy finished Grade Stakes on west side of Site 12:00 Pm 1:30 Drager tube Sampling: North Gate East Side No Readings 2:00 Drums found East of North Gate. Some product in them. Removed to west side fire pit.

DISTRIBUTION
1. Proj Mngr.
2. Field Office
3. File

PAGE _ of __ PAGES

By: Dan Petrich Title: Supervisor

DAILY AIR MONITORING LOG
ACS NPL SITE
Griffith, Indiana

Date: 9/13/02	Page ___ of ___
Site Activity: Cut, Grade, Survey	
Monitoring Performed by: Dan Petrich	Company Name: HHST

outside Fence

Time	Monitoring Location	Instrument	Reading (ppm)	Comments
8:23	North West Corner Of	P:d	0.0 - 0.4	MWH Suggested 5 min
8:35	East of South Gate	P:d	4.8 avg Peak 104	Cut process 5 min
9:09	area Survey	P:d	0.5 Avg Peak 31.8	Survey Activities 45 min
10:32	North Side east of Rd	P:d	0.0 avg Peak 3.5	Cut Process 9 min
11:00	East Side Area	P:d	.1 Avg Peak 4.1	Cut and Survey 56 min
12:50	East, North Gate	P:d	1.5 Avg 62.7 Peak	Cut East Side → 11 min
	Central West Side	P:d	" "	Grade West Side ↗
1:30	East of North Gate	Drager	0	
	East of North Gate	Drager	0	
2:00	Center of Roadway	P:d	.1 Avg, 7.6 Peak	15 min

HARD HAT SERVICES, INC.
Engineering, Construction and Management Solutions

DAILY CONSTRUCTION REPORT

DATE: 9/16/02

PROJECT: ACS
JOB NO:
CLIENT: MWH
PROJECT MANAGER: John McDonough

WEATHER Sunny
TEMP: 78°-84°
HUMIDITY: 60°
WIND/DIR: North, Northwest From

AVERAGE FIELD FORCE

Name of Subcontractor	Non-Manual	Manual	Remarks
Kelsa Trucking			

VISITORS:

Time	Name	Representing	Remarks

EQUIPMENT UTILIZED FOR WORK ACTIVITIES

Hitachi 200, Cat D5, Dumptruck, water truck

UNUSUAL ITEMS

Austin Fleet Services meting Corrections on Pipe tie in's

CONSTRUCTION ACTIVITIES

7:10 Safety tail gate meeting
7:20 Discussed Variance around storm drain area's near Perimeter
7:30 Waiting to gain Access to exclusion zone to begin work
7:30 calibrated P.id Meter, Fresh air + Cal gas, OK!
7:50 Started Machines. Cut Area by North fence and break Room. Grading on west side of Road.
8:10 checked Break room and Secured doorways - Posted Signs
8:30 P.id inside Breakroom
9:50 Break
11:00 water hook up inside exclusion zone complete 2" male camlock.

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By: Dan Petrich Title: Superintendent

DAILY CONSTRUCTION REPORT
(Cont'd)

DATE: 9/16/02

CONSTRUCTION ACTIVITIES
1:00 Ran water truck around site. 1:15 Took samples around work area (North Side, South of Break Room) 2:00 moved fence near Break room and next to (RR) tracks on South Area. 2:30 Ran water truck 3:00 All Aware, we need to raise grade to dispose additional Soils. 4:15 Stoped workers

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PAGE _ of __ PAGES

By: [signature] Title: Supervisor

DAILY AIR MONITORING LOG
ACS NPL SITE
Griffith, Indiana

Date: 9/16/02	Page 1 of 1
Site Activity: Grading Sub-base	
Monitoring Performed by: Dan Petrich	Company Name: HHSI

Time	Monitoring Location	Instrument	Reading (ppm)	Comments	
8:10	Breathing Zone	P.I.d	0.0 avg 83.9 peak	North gate, Break Room	36 min
8:30	ACS Break Room	P.I.d	0.1 avg .4 Peak		3 min
9:38	Road in Dump Truck	P.I.d	0.0 avg 7.7 peak	Bumpy Ride	13 min
10:45	Down zone work Area	P.I.d	3.9 avg 136 Peak	Driver toward Break Room	4 min
11:00	outside exclusion Zone	P.I.d	0.4 avg 124 Peak	Highest readings near work	15 min
11:25	Exhaust of Break Room	P.I.d	.1 avg 16 Peak		10 min
1:15	North Area, South Break Room	P.I.d	1.5 avg 28.7 Peak		11 min
2:00	North West Area	P.I.d	0.7 avg 38.2 Peak		40 min

HARD HAT SERVICES, INC.
Engineering, Construction and Management Solutions

DAILY CONSTRUCTION REPORT

DATE: 9/17/02

PROJECT: ACS
JOB NO:
CLIENT: MWH
PROJECT MANAGER: John McDonagh

WEATHER Sunny
TEMP: 60° – 83°
HUMIDITY:
WIND/DIR: East + South From

AVERAGE FIELD FORCE

Name of Subcontractor	Non-Manual	Manual	Remarks
Keldora Trucking			

VISITORS:

Time	Name	Representing	Remarks

EQUIPMENT UTILIZED FOR WORK ACTIVITIES

Hitachi 200, Cat D5. Dump truck, water truck

UNUSUAL ITEMS

CONSTRUCTION ACTIVITIES

7:00 Tail Gate Safety meeting
7:20 Began Cut along west Edge moving South.
8:40 moved South Perimeter fence to gain access to Perimeter Cut line.
10:16 Pid Sampling South west area of Site.
11:30 Talked with Travis concerning fence along South side of exclusion zone. Fence needs to be completely removed for truck access.
1:30 Section of Southern fence fell into cut area.
3:00 finished Perimeter Cut. Began Center Rd Cut.
3:15 was asked by MWH to accept two dump truck loads of material from Site to the South.

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By: Dan Petrich Title: Supervisor

DAILY CONSTRUCTION REPORT
(Cont'd)

DATE: 9/12/02

CONSTRUCTION ACTIVITIES
3:20 Pushed ● Road Gravel into Perimeter Cut to allow Access of two loads of material.
1:45 Travis and I Removed and Stacked temp fence Along Southern border of Site. Replaced with Steel Posts and Rope.
4:30 Stoped Work

DISTRIBUTION
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PAGE _ of _ PAGES

By: Dan Pettrich Title: Supervisor

DAILY AIR MONITORING LOG
ACS NPL SITE
Griffith, Indiana

Date: 9/17/02 Page 1 of 1

Site Activity: Cut, Grade

Monitoring Performed by: Don Pettick Company Name: HHSI

Time	Monitoring Location	Instrument	Reading (ppm)	Comments	
8:40	Southwest Section	PID	0.0 avg 1.8 peak	Breathing Zone	14 min
10:16	Southwest Section	PID	.8 Avg 46.3 Peak	" "	12 min
10:30	Southwest Section	Draeger	1-5 ppm	Trichloroethan - 5	
11:00	Southwest Section	Draeger	0	Carbon Tetrachloride	
11:05	Southwest Section	PID	.1 Avg 4.3 Peak	Work Area BZ	30 min
1:00	Southern Section	PID	.6 Avg 21.2 Peak	Work Area BZ	31 min
2:00	Southern Section	PID	.1 Avg 8.5 Peak	Up wind Work Area	27 min

HARD HAT SERVICES, INC.
Engineering, Construction and Management Solutions

DAILY CONSTRUCTION REPORT

DATE: 9/18/02

PROJECT: ACS
JOB NO:
CLIENT: MWH
PROJECT MANAGER: John McDonough

WEATHER: Overcast
TEMP:
HUMIDITY:
WIND/DIR: South, South East From

AVERAGE FIELD FORCE

Name of Subcontractor	Non-Manual	Manual	Remarks
Kelloen Trucking			

VISITORS:

Time	Name	Representing	Remarks

EQUIPMENT UTILIZED FOR WORK ACTIVITIES

Hitachi 200, Cat D5, Dump trucks, water truck, Hypac Down Roller

UNUSUAL ITEMS

CONSTRUCTION ACTIVITIES

7:10 Tailgate Safety meeting
7:15 Continue to Cut Center of Site and Grade. Footwall Roller is being mobilized to the site. Conditions good on site from overnight Rain.
8:16 Drums exposed, South of Brent Loom, during cut activities.
9:00 Down Roller Arrived on Site. Began Rolling.
10:00 Discussed Subgrade survey activities with John McDonagh
10:30 Notified MWH of debris Piles on Site (Pipe + Rubber)

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By: Dan Patrick Title: Supervisor

DAILY CONSTRUCTION REPORT
(Cont'd)

DATE: 9/18/02

CONSTRUCTION ACTIVITIES
1:30 Buried Drums on Site 2:30 Discussed Decon Procedures with MWH using Pad North of exclusion zone. using water truck as source of water. 3:00 ACS had employees remove piping from site. 3:30 Stopped work Subgrade finished upon approval

DISTRIBUTION
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By: Dan Petrich Title: Supervisor

DAILY AIR MONITORING LOG
ACS NPL SITE
Griffith, Indiana

Date: 9/18/02	Page 1 of 1
Site Activity: Cut + Grade	
Monitoring Performed by: Dan Petrich	Company Name: HHSI

Time	Monitoring Location	Instrument	Reading (ppm)	Comments	
8:16	Site Center Work Area	PID	2.1 avg 6.1 peak	Exposed drums	6 min
9:00	Site Center Work Area	PID	.3 avg 9.6 Peak	Exposed drums	16 min
10:30	Center + East Area	PID	.8 avg 18.4 Peak	Grading + Rolling	12 min
1:30	All over Site	PID	0.0 Avg 3.0 Peak		27 min

HARD HAT SERVICES, INC.

Engineering, Construction and Management Solutions

DAILY CONSTRUCTION REPORT

DATE: 9/19/02

PROJECT: ACS

JOB NO:

CLIENT: MWH

PROJECT MANAGER: John McDonough

WEATHER

TEMP:

HUMIDITY:

WIND/DIR: South, South East Flow

AVERAGE FIELD FORCE

Name of Subcontractor	Non-Manual	Manual	Remarks
Area Survey			
Kelderm Trucking			

VISITORS:

Time	Name	Representing	Remarks

EQUIPMENT UTILIZED FOR WORK ACTIVITIES

Water Truck

UNUSUAL ITEMS

CONSTRUCTION ACTIVITIES

7:30 Tail Gate Safety meeting With Area Survey

7:50 Talked w.th Travis from MWH about confirmation on Pipe coordinates

8:00 Set up water line to fill Water truck

9:30 Decon Roller + load for Demob. Spot checked with PID

9:45 Decon Dump truck

10:10 Hotachi 200 Decon

10:30 Sprayed water truck + Dozer

(Area Survey) had 1/2 Hour delay because of equipment failure. Started @ 7:30 AM Arrived

DISTRIBUTION
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3. File

By: Dan Petrick Title: Supervisor

DAILY CONSTRUCTION REPORT
(Cont'd)

DATE: 9/19/02

CONSTRUCTION ACTIVITIES
10:43 Kellorn Demobilized Roller, Decon and Stage outside exclusion zone the Dump Truck + Hitachi 200. Washed down The Cat D5 + water truck and left inside exclusion zone. Kellorn left site (Fred).
11:30 - Huge Rain Storm - met w/ MWH to discuss action items. 12:30 Surveyors Resume laying out site - subgrade grid 2:00 Performed more Air Monitoring around the Survey crew and had Ø readings. Also no dusting as rain gave the site a nice watering down!

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By: Dan Petrick Title: Supervisor

DAILY AIR MONITORING LOG
ACS NPL SITE
Griffith, Indiana

Date: 9/19/02 Page 1 of 1

Site Activity: Survey Sub Grade, Decon Equipment

Monitoring Performed by: Company Name:

Time	Monitoring Location	Instrument	Reading (ppm)	Comments	
6:00	All over Site	PID	0.0 Avg 80.1 Peak	Peak @ open drum	till
9:30	Compact Roller	PID	0.0	After Decon	2 min
9:56	Dump Truck	PID	0.0	After Decon	2 min
10:15	Hitachi 200	PID	0.0	After Decon	2 min
11:00	All over SITE	PID	0.0	Nothing	12-8 min
2:00	All over SITE	PID	0.0	No intrusive work out Survey 14 m.	

HARD HAT SERVICES, INC.
Engineering, Construction and Management Solutions

DAILY CONSTRUCTION REPORT

DATE: 9/20/02

PROJECT: ACS
JOB NO:
CLIENT: MWH
PROJECT MANAGER: John McDonough

WEATHER overcast, Rain
TEMP: 69°
HUMIDITY: 96°
WIND/DIR: South Southwest

AVERAGE FIELD FORCE

Name of Subcontractor	Non-Manual	Manual	Remarks
Area Survey			

VISITORS:

Time	Name	Representing	Remarks

EQUIPMENT UTILIZED FOR WORK ACTIVITIES

UNUSUAL ITEMS

CONSTRUCTION ACTIVITIES

7:00 Arrived on Site
7:30 Area Survey Arrived. Had Safety meeting and discussed Pipe layout.
7:40 Left Site

DISTRIBUTION
1. Proj Mngr.
2. Field Office
3. File

By: Dan Pethick Title: Supervisor

HARD HAT SERVICES, INC.
Engineering, Construction and Management Solutions

DAILY CONSTRUCTION REPORT

DATE: 9/23/02

PROJECT: AC5
JOB NO:
CLIENT: MWH
PROJECT MANAGER: John McDonough

WEATHER Sunny
TEMP: 45° - 72°
HUMIDITY:
WIND/DIR: South
From

AVERAGE FIELD FORCE

Name of Subcontractor	Non-Manual	Manual	Remarks
Kelson Trucking			
AREA Survey	7:30 - 1:00pm		

VISITORS:

Time	Name	Representing	Remarks

EQUIPMENT UTILIZED FOR WORK ACTIVITIES

Hitachi 150, ~~Service truck x 2, Tow-in welder~~,

UNUSUAL ITEMS

CONSTRUCTION ACTIVITIES

7:00 on Site
7:30 Tail Gate Safety Meeting
7:40 left Site
9:10 Back on Site. Area Survey continues to mark piping locations
9:30 Calibrate PID meter, Fresh Air + Span gas OK!
9:40 Air sampled all over Site in breathing zone
10:00 Broke 18" Storm line during excavation activities. Consulted MWH + AC5. Resolved Action plan for returning to service.
12:30 Site Safety meeting for Mike, Terrance and Tyron.

DISTRIBUTION
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By: Dan Petrich Title: Supervisor

DAILY CONSTRUCTION REPORT
(Cont'd)

DATE: 9/23/02

CONSTRUCTION ACTIVITIES
1:00 Excavated around existing HDPE Stub-up's. Uncovered existing Sanitary line. All work performed on west side of Site 1:00 Area Survey finished laying out pipe coordinates. 3:00pm walked around with Travis to discuss points that could not be trenched do to existing structures, RR tracks, process piping.
3:30 plan to start making connections to existing pipe tomorrow.

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PAGE 2 of 2 PAGES

By: Don [signature] Title: Supervisor

DAILY AIR MONITORING LOG
ACS NPL SITE
Griffith, Indiana

Date: 9/23/02	Page 1 of 1
Site Activity: Survey, Began trench excavation	
Monitoring Performed by: Dan Petrich	Company Name: HHSE

Time	Monitoring Location	Instrument	Reading (ppm)	Comments	
9:40	All over excavation Zone	Field	0.0 avg .8 Peak		17 Min
10:30	West Side by Pipe Stubs	Field	0.0 avg .1 Peak		16 Min
2:40	South Side of Pipe Stubs	Draeger	0	Trichloroethan-5	
2:50	North Side of Pipe Stubs	Draeger	0	Carbon Tetrachloride	

HARD HAT SERVICES, INC.
Engineering, Construction and Management Solutions

DAILY CONSTRUCTION REPORT

DATE: 9/24/02

PROJECT: ACS
JOB NO:
CLIENT: MWH
PROJECT MANAGER: John McDonagh

WEATHER Partly Cloudy
TEMP: 67°
HUMIDITY:
WIND/DIR: North, Northwest From

AVERAGE FIELD FORCE

Name of Subcontractor	Non-Manual	Manual	Remarks
Kelder			

VISITORS:

Time	Name	Representing	Remarks

EQUIPMENT UTILIZED FOR WORK ACTIVITIES

Hitachi 150, Fusion welder, Bobcat

UNUSUAL ITEMS

CONSTRUCTION ACTIVITIES

6:50 Arrived on Site
7:15 Tailgate Safety Meeting + Activity overview
7:30 Started exposing existing pipe stubs to make connections. Agreed that 2" + 3" piping would go below existing storm drain pipe. 8" pipe would run over storm drain pipe.
10:00 Began Fusion welding in trench with MWH SMALL Fusion machine. Ran pipes (2" + 3") out below 18" storm drain lines. Applied sand bedding material in trench.

DISTRIBUTION
1. Proj Mngr.
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By: Dan Petrick Title: Supervisor

DAILY CONSTRUCTION REPORT
(Cont'd)

DATE: 9/24/02

CONSTRUCTION ACTIVITIES
Changes were made in the direction of "B" trench towards the blower shed location. from A2 → B5 + B6 Area. Coordinates were given on a map supplied by MWH. (Figure C2). Worked til 4:00 pm

DISTRIBUTION
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By: Dan Petrick Title: Supervisor

DAILY AIR MONITORING LOG
ACS NPL SITE
Griffith, Indiana

Date: 9/24/02	Page 1 of 1
Site Activity: Dig trench, Lay Pipe	
Monitoring Performed by: Dan Petrich	Company Name: HAKI

Time	Monitoring Location	Instrument	Reading (ppm)	Comments	
7.45	West Side near Pipe Stubs	P.id	0.0 Avg 0.0 Peak	Breathing Zone + 50:1 Spot check	5 min
10:15	West Side near Pipe Stubs	P.id	0.0 Avg 7.4 Peak	Breathing Zone	20 min
1:00	West Side Trench area	P.id	0.6 Avg 17.2 PEAK	Down wind Breathing Zone	5 min
2:00	(West) Down wind from Backhoe	P.id	0.4 Avg 13.8 Peak	Breathing Zone	22 min

HARD HAT SERVICES, INC.
Engineering, Construction and Management Solutions

DAILY CONSTRUCTION REPORT

DATE: 5/25/02

PROJECT: AC5
JOB NO:
CLIENT: MWH
PROJECT MANAGER: John McDonough

WEATHER Sunny
TEMP: 67°
HUMIDITY:
WIND/DIR: North, Northwest From

AVERAGE FIELD FORCE

Name of Subcontractor	Non-Manual	Manual	Remarks
Kelder			
Area Survey			

VISITORS:

Time	Name	Representing	Remarks

EQUIPMENT UTILIZED FOR WORK ACTIVITIES

UNUSUAL ITEMS

CONSTRUCTION ACTIVITIES

7:30 Tool safe meeting. Starting trench @ A3
Continued Trench from A3 to (C1, B1, A1) to (D5+D6 Area A) Blower (Shed coordinates)
Backhoe operator + Labor using respirator part time based on Proximity to Contaminate and wind direction.
Ran 2" & 3" Pipe to C1, B1, A1. Continued 2" Pipe to shed coordinates
Received 2" whips and transition connections from MWH.

DISTRIBUTION
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3. File

By: John Patrick Title: Supervisor

DAILY CONSTRUCTION REPORT
(Cont'd)

DATE: 9/25/02

CONSTRUCTION ACTIVITIES
Discussed Presore testing Procedures with MWH Backhoe activities are finished. Walked Site with MWH to discuss monitoring well locations. Some Coordinates are directly on Pipe Coordinates others vary in Proximity to Pipe runs. Will discuss in Thursday meeting.
left Site @ 3:00

DISTRIBUTION
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By: [signature] Title: Superintendent

DAILY AIR MONITORING LOG
ACS NPL SITE
Griffith, Indiana

Date: 9/25/02	Page 1 of 1
Site Activity: Underground Pipe Installation	
Monitoring Performed by: Dan Petrich	Company Name: HHST

Time	Monitoring Location	Instrument	Reading (ppm)	Comments	
8:30	West Side + Center	PID	0.0 Avg 1.9 Peak	Both Crew Breathing Zone	32 min
9:30	West Side Pipe Crew Down Wind	Drager	0	During excavation Activities Carbon Tetrachloride	
9:50	West Side Pipe Crew Down Wind	Drager	0	During excavation Activities Trichloroethane - 5	
10:10	West Side Pipe Crew Down Wind	PID	0.0 Avg .2 Peak	During excavation Activities	28 min
1:08	A-3 to B-5 Trench	PID	.2 Avg 65.5	Trench bedding + Piping	1:08

HARD HAT SERVICES, INC.

Engineering, Construction and Management Solutions

DAILY CONSTRUCTION REPORT

DATE: 9/26/02

PROJECT: ACS

JOB NO:

CLIENT: MWH

PROJECT MANAGER: John McDonough

WEATHER Sunny

TEMP: 75°

HUMIDITY:

WIND/DIR: East, South East From

AVERAGE FIELD FORCE

Name of Subcontractor	Non-Manual	Manual	Remarks
Area Survey	7:30 - 9:30		

VISITORS:

Time	Name	Representing	Remarks

EQUIPMENT UTILIZED FOR WORK ACTIVITIES

Bobcat, Case 580, Fusion machine

UNUSUAL ITEMS

CONSTRUCTION ACTIVITIES

7:00 Arrived on site

7:15 Tail Gate Safety meeting

7:30 met with Area Survey to discuss pipe elevation survey.

Continued bringing 2"&3" pipe out on to exclusion zone Area.

Working on whip + transition fitting connections for Pressure test.

Sand bags obtained for use during Pressure test.

Area survey Continued 21 SVE Stake locations and shot elevations on installed Piping from east of 18" Storm drain lines to just past A3.

DISTRIBUTION
1. Proj Mngr.
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By: Dan Petrich Title: Supervisor

DAILY CONSTRUCTION REPORT
(Cont'd)

DATE: 9/26/02

CONSTRUCTION ACTIVITIES
Used uni-strute and clamps provided by MWH to secure 5 x 2" pipes at Blower shed Coordinates. Pipe brought 48" above clay layer as per MWH. Sand: 2) loads on 9/23/02, 2) loads 9/25/02
Pressure Test #19 2:10 - 2:25 90 PSI (OK) #7 2:38 - 2:50 90 PSI (OK) #20 Not tested due to existing process line connection. Needs to be shut down before it can be tested.
#3 3:22 3:37 90 PSI (OK) #10 [redacted] control line, No test needed #11 Control line No test needed Lee Crosz MWH

DISTRIBUTION
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2. Field Office
3. File

By: Dan Petrich Title: Supervisor

DAILY AIR MONITORING LOG
ACS NPL SITE
Griffith, Indiana

Date: 9/26/02	Page 1 of 1
Site Activity:	
Monitoring Performed by: Dan Petrich	Company Name: HHSI

Time	Monitoring Location	Instrument	Reading (ppm)	Comments	
8:00	West Side of Site And Trench below Subgrade	P.I.D	0.0 Avg 16.4 Peak	Peaks in trench below Subgrade. Respirators worn when in trench	38 min
9:30	Shower Stand AREA Breathing Zone	P.I.D	0.0 Avg 2.6 Peak		30 min

HARD HAT SERVICES, INC.
Engineering, Construction and Management Solutions

DAILY CONSTRUCTION REPORT

DATE: 9/27/02

PROJECT: ACS
JOB NO:
CLIENT: MWH
PROJECT MANAGER: John McDonough

WEATHER Cloudy
TEMP: 67°
HUMIDITY:
WIND/DIR: West, Northwest

AVERAGE FIELD FORCE

Name of Subcontractor	Non-Manual	Manual	Remarks

VISITORS:

Time	Name	Representing	Remarks

EQUIPMENT UTILIZED FOR WORK ACTIVITIES

Case 580, Bobcat with trencher attachment, Fusion machine

UNUSUAL ITEMS

CONSTRUCTION ACTIVITIES

7:10 Safety meeting
Started backfill on trench from A4 to A3 in preparation of 8" pipe.
Began trench from B6 to D and E trench
Worked on 8" Pipe connection @ Stub-ups
Repaired 2nd 18" Storm Drain Per ACS (Damage not by HHSI)
Will put Bentonite over both Pipes Prior to backfill

DISTRIBUTION
1. Proj Mngr.
2. Field Office
3. File

By: Dan Pettick Title: Supervisor

DAILY AIR MONITORING LOG
ACS NPL SITE
Griffith, Indiana

Date: 9/27/02 Page 1 of 1

Site Activity: Backfill trench, 8" installation

Monitoring Performed by: Dan Pickard Company Name: HHST

Time	Monitoring Location	Instrument	Reading (ppm)	Comments	
7:30	West side trench area A4-A3	Pid	0.2 Avg 37.4 Peak	Backfill Activities	22 min
8:00	In trench A4-A3	Pid	0.0 Avg 4.2 Peak	Spread backfill with Dairyvators	11 min
9:20	B-6 to D2	Pid	1.0 Avg 81.6 Peak	Bobcat Trencher	12 min
11:00	D-3 to D7	Pid	3.2 Avg 221 Peak	On Bobcat Trencher full face respirator worn	30 min

HARD HAT SERVICES, INC.
Engineering, Construction and Management Solutions

DAILY CONSTRUCTION REPORT

DATE: 9/30/02

PROJECT: ACS
JOB NO:
CLIENT: MWH
PROJECT MANAGER: John McDonagh

WEATHER Sunny
TEMP: 64° - 84°
HUMIDITY:
WIND/DIR: West, Southwest, South Flow

AVERAGE FIELD FORCE

Name of Subcontractor	Non-Manual	Manual	Remarks

VISITORS:

Time	Name	Representing	Remarks

EQUIPMENT UTILIZED FOR WORK ACTIVITIES

Case 580, Bobcat with trencher,

UNUSUAL ITEMS

CONSTRUCTION ACTIVITIES

7:10 Tail Gate Safety meeting
7:30 Calibrate PID meter 50ppm gas, Fresh air (ok)
Continued installation of 8" pipe from A4 to A3
8:30 Poured Bentonite Around 18" Storm drain Pipes and partially backfilled
11:30 Potential for exposure Low- No Trenching or excavating activities.
Spoke with Tom + Lee of MWH about starting tomorrow @ 6:00 am. (ok)
12:30 Trenched 10' in both directions on C Trench off A Trench (3" line)
Connected 3" T and ~~Sampling~~ well Stub @ A1, B1, C1.
SVE-58

DISTRIBUTION
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2. Field Office
3. File

By: Dan Petrich Title: Supervisor

DAILY CONSTRUCTION REPORT
(Cont'd)

DATE: 7/30/02

CONSTRUCTION ACTIVITIES
Confirmed location of MW stub @ A1, B1, C1. North 5' Running West with 1" stub-out. Set 8" P.Pe in trench from A4 to Aboveground Process lines on West Side of Site. Began backfill and Trace wire in that Area. Finished Connection of 3" PVC T and 5" stub @ (A1, B1, C1). SVE-58
8" PVC pipe welded from A4 to Blower shed location. Riser stubs still need to be installed. [redacted]

DISTRIBUTION
1. Proj Mngr.
2. Field Office
3. File

By: Dan Ledrick Title: Supervisor

DAILY AIR MONITORING LOG
ACS NPL SITE
Griffith, Indiana

Date: 9/30/02	Page 1 of 1
Site Activity: Installation of 8" HDPE Pipe	
Monitoring Performed by: Dan Petrich	Company Name: HHSF

Time	Monitoring Location	Instrument	Reading (ppm)	Comments	
8:00	A4 to A3 Area	P.I.	0.0 Avg .1 Peak	Fusion activities	26 min
10:00	A4 to A3 Area	P.I.	0.0 Avg .2 Peak	Fusion activities	17 min
12:30	A4 to A3 Area	P.I.	0.0 Avg 1.7 Peak	Fusion activities	18 min
1:30	A4 to A3 Area	P.I.	0.0 Avg 2.9 Peak	Fusion + Trenching	42 min

HARD HAT SERVICES, INC.
Engineering, Construction and Management Solutions

DAILY CONSTRUCTION REPORT

DATE: 10/1/02

PROJECT: ACS
JOB NO:
CLIENT: MWH
PROJECT MANAGER: John McDonough

WEATHER: Sunny
TEMP: 65° - 85°
HUMIDITY:
WIND/DIR: South, Southwest

AVERAGE FIELD FORCE

Name of Subcontractor	Non-Manual	Manual	Remarks

VISITORS:

Time	Name	Representing	Remarks
~~[illegible]~~ ~~[illegible]~~			
10:30 - 11:00	Fred	Kelbon	Pick-up [illegible] 150

EQUIPMENT UTILIZED FOR WORK ACTIVITIES Dry Decon

Case 580, Bobcat, Fusion machine

UNUSUAL ITEMS

CONSTRUCTION ACTIVITIES

6:00 Safety meeting
Worked ~~on~~ Completion of 8" pipe. Began partial backfill.
Put flanges on Riser pipes in preparation of Pressure test.
12:55 Began Pressure test on #13 Gasket blew at 85PSI
Continued to attempt Pressure test. Gaskets could not hold.

DISTRIBUTION
1. Proj Mngr.
2. Field Office
3. File

PAGE 1 of 1 PAGES

By: Dan Petrich Title: Supervisor

DAILY AIR MONITORING LOG
ACS NPL SITE
Griffith, Indiana

Date: 10/1/02	Page 1 of 1
Site Activity: Installation of 8" Pipe	
Monitoring Performed by: Dan Patrick	Company Name: HHSE

Time	Monitoring Location	Instrument	Reading (ppm)	Comments	
8:00	A3-B6 Area	PID	0.0 Avg. 2 Peak	8" Pipe Installation	28 min
10:00	A3-B6 Area	PID	0.0 Avg. 5 Peak	8" Pipe Installation	58 min

HARD HAT SERVICES, INC.
Engineering, Construction and Management Solutions

DAILY CONSTRUCTION REPORT

DATE: 10/2/02

PROJECT: ACS
JOB NO:
CLIENT: AWH
PROJECT MANAGER: John McDonough

WEATHER Partly Cloudy
TEMP: 68°-82°
HUMIDITY: 72°
WIND/DIR: South, Southwest

AVERAGE FIELD FORCE

Name of Subcontractor	Non-Manual	Manual	Remarks

VISITORS:

Time	Name	Representing	Remarks

EQUIPMENT UTILIZED FOR WORK ACTIVITIES

Case 580, Bobcat w/ Trencher, Compressor

UNUSUAL ITEMS

CONSTRUCTION ACTIVITIES

7:10 Tailgate Meeting
Obtained 4 new gaskets for 8" Pressure test. 50psi for 30 min per MWH.

Began trench from C1 to C3 and B6 to D4. Drums + product found At Area between D1 + D2.

	Start	Stop	
Pressure test on Pipe #~~13~~ 8	9:57	10:51	OK
Pressure test on pipe #12	1:10	1:40	OK

DISTRIBUTION
1. Proj Mngr.
2. Field Office
3. File

By: Dan Petrosky Title: Supervisor

DAILY CONSTRUCTION REPORT
(Cont'd)

DATE: 10/2/02

CONSTRUCTION ACTIVITIES
Asked to cover divots pulled from trench with dirt. Air monitored in Area + Breakroom. Around divots Trench completed C1 to C5, D1 to D3, E1 to E3, D4 to D7

DISTRIBUTION
1. Proj Mngr.
2. Field Office
3. File

By: Dan Pafford Title: Supervisor

DAILY AIR MONITORING LOG
ACS NPL SITE
Griffith, Indiana

Date: 10/2/02	Page 1 of 1
Site Activity: Trenching	
Monitoring Performed by: Dan Patrick	Company Name: HHST

Time	Monitoring Location	Instrument	Reading (ppm)	Comments	
8:30	D1 to D3 AREA	P.I.D	0.1 Avg 53.1 Peak	Drums uncovered Respirators worn Peak from down wind Backhoe	46 min
10:35	D1 to D4 AREA	P.I.D	0.3 Avg 46.0 Peak	Drums uncovered Respirator worn Backhoe	32 min
12:30	C2 to C6 area	P.I.D	2.6 Avg 1505 Peak	Drums encountered Respirator worn Bobcat with Trencher	2:38 min
3:00	C5 to C6 area D1 to D2 area	P.I.D	1.8 Avg 79.0 Peak	Cleaning up drums outside Berm Cover with Sand Respirator worn	39 min
4:10	Inside Berm	P.I.D	0.0 Avg 1 Peak	Windows open wind SW at the North	3 min

HARD HAT SERVICES, INC.
Engineering, Construction and Management Solutions

DAILY CONSTRUCTION REPORT

DATE: 10/3/02

PROJECT: ACS
JOB NO:
CLIENT: MWH
PROJECT MANAGER: John McDonough

WEATHER Cloudy
TEMP: 65°-72°
HUMIDITY:
WIND/DIR: Northwest

AVERAGE FIELD FORCE

Name of Subcontractor	Non-Manual	Manual	Remarks
Area Survey	7:45 - 12:00		
Keller Trucking			2 loads of Sand

VISITORS:

Time	Name	Representing	Remarks

EQUIPMENT UTILIZED FOR WORK ACTIVITIES

Case 580, Bobcat, Fusion machine, Plate Compactor

UNUSUAL ITEMS

CONSTRUCTION ACTIVITIES

7:10 Safety meeting

Began Installing 3" Pipe and well stubs from SV-58 to C5

Installed 3" Pipe from SVE-58 to C7. Put in SVE stubs 50, 43, 46, 47, 48

Backfill trench C1 to C7

Area Survey shot Pipe + stubs As-builts from B1 to B6, C1 to C7

Continued and finished D trench through concrete slab.

DISTRIBUTION
1. Proj Mngr.
2. Field Office
3. File

By: Dan Leftwich Title: Supervisor

DAILY AIR MONITORING LOG
ACS NPL SITE
Griffith, Indiana

Date: 10/3/02	Page 1 of 1
Site Activity: 3" Pipe + well stub installation	
Monitoring Performed by: Dan Petrich	Company Name: HHSI

Time	Monitoring Location	Instrument	Reading (ppm)	Comments	
8:20	All over Site	PID	0.0 Avg 5.0 Peak	Trenching, Pipe installation Site Discussion Survey Crew	1:21
10:00 Am	C3 to C7	PID	2.8 Avg 113 Peak	Trenching with Case 580 Survey Crew Respirators worn	1:36
3:00	C6	Drager	0	Carbon tetrachloride	
	C6	Drager	0	Trichloroethane - 5	

HARD HAT SERVICES, INC.

Engineering, Construction and Management Solutions

DAILY CONSTRUCTION REPORT

DATE: 10/4/02

PROJECT: ACS

JOB NO:

CLIENT: MWH

PROJECT MANAGER: John McDonough

WEATHER Cloudy - Rain

TEMP: 65°

HUMIDITY:

WIND/DIR:

AVERAGE FIELD FORCE

Name of Subcontractor	Non-Manual	Manual	Remarks

VISITORS:

Time	Name	Representing	Remarks

EQUIPMENT UTILIZED FOR WORK ACTIVITIES

UNUSUAL ITEMS

CONSTRUCTION ACTIVITIES

7:10 Safety meeting

Worked on backfill of trench C2 thru C7

Repair of D an E Trench for 2" pipe.

Rained out 10:00

DISTRIBUTION
1. Proj Mngr.
2. Field Office
3. File

By: Dan Petrich Title: Supervisor

HARD HAT SERVICES, INC.

Engineering, Construction and Management Solutions

DAILY CONSTRUCTION REPORT

DATE: 10/7/02

PROJECT: ACS

JOB NO:

CLIENT: MWH

PROJECT MANAGER: John McDonough

WEATHER: Sunny

TEMP: 45°-60°

HUMIDITY:

WIND/DIR: North, Northwest

AVERAGE FIELD FORCE

Name of Subcontractor	Non-Manual	Manual	Remarks

VISITORS:

Time	Name	Representing	Remarks

EQUIPMENT UTILIZED FOR WORK ACTIVITIES

Case 580, Bobcat with trencher, Fusion machine, compactor

UNUSUAL ITEMS

CONSTRUCTION ACTIVITIES

7:10 safety meeting

7:20 Began trench from C23 to C21, Concrete, Product, Drum [redacted] parts.

1:10 Pressure test 3" line @ C21 + C7 [redacted] 91 Lbs 1.10 Start 1:25 Finish Pipe #3 OK

2:18 Pressure test 2" line @ D1 to D7 and E3 2:29 Start 2:45 Finish OK 90 lbs Loss .5 lbs

DISTRIBUTION
1. Proj Mngr.
2. Field Office
3. File

By: Dan Petrich Title: Supervisor

DAILY CONSTRUCTION REPORT
(Cont'd)

DATE: 10/7/02

CONSTRUCTION ACTIVITIES
Installed 3" Pipe from C22 to C21 with well stubs. Continued trench from C21 to C18 Made Arrangements for Rebar/steel to be delivered on 10/8/02 Discussed pipe stubs @ Blower shed will Re-align.
Scheduled Area Survey to Arrive on 10/8/02.

DISTRIBUTION
1. Proj Mngr.
2. Field Office
3. File

By: Dan Petrich Title: Supervisor

DAILY AIR MONITORING LOG
ACS NPL SITE
Griffith, Indiana

Date: 10/7/02	Page 1 of 1
Site Activity: 3" PVC installation C23 to C21	
Monitoring Performed by: Dan Petrich	Company Name: HHSI

Time	Monitoring Location	Instrument	Reading (ppm)	Comments	
7:30	C23 to C21 Trenching activities	PID	8.3 avg 458 peak	Concrete, Product respirators worn	2:15
10:40	C23 to C21 walk around	PID	.8 Avg 81.3 peak		33 min
1:00	C21 to C18 Trenching	PID	6.2 Avg 322 Peak	Soft Sand Respirators worn	1:12

HARD HAT SERVICES, INC.

Engineering, Construction and Management Solutions

DAILY CONSTRUCTION REPORT

DATE: 10/8/02

PROJECT: ACS

JOB NO:

CLIENT: MWH

PROJECT MANAGER: John McDonough

WEATHER Sunny / Partly Cloudy

TEMP: 50° - 65°

HUMIDITY:

WIND/DIR: South, Southwest

AVERAGE FIELD FORCE

Name of Subcontractor	Non-Manual	Manual	Remarks
Area Survey	7:30 - 10:30		
Kaldor			1 load fee gravel

VISITORS:

Time	Name	Representing	Remarks

EQUIPMENT UTILIZED FOR WORK ACTIVITIES

Case 580, Bobcat with trencher, Fusion machine, Computer

UNUSUAL ITEMS

CONSTRUCTION ACTIVITIES

Safety meeting, Calibrated PID

Area survey shot pipe elevations on D+E trench and C trench from C1-C21

Backfilled from C1 - C21

Performed re-work on pipe stubs @ blower shed.

Backfilled D+E trench

DISTRIBUTION
1. Proj Mngr.
2. Field Office
3. File

By: Dan Petrick Title: Supervisor

DAILY AIR MONITORING LOG
ACS NPL SITE
Griffith, Indiana

Date: 10/8/02	Page 1 of 1
Site Activity: Pipe installation, Survey, Backfill	
Monitoring Performed by: Dan Fetrich	Company Name: HHSI

Time	Monitoring Location	Instrument	Reading (ppm)	Comments	
6:30	Followed Survey Crews Through D&E Trench C23 - C21 Put on Bobcat during backfill Activities	PID	0.9 Avg 164 Peak	Respirators worn by Bobcat operator + Laborer	2:38
12:00	Put on Bobcat during backfill activities	PID	0.5 Avg 16.5 Peak	Respirators worn	2:43

HARD HAT SERVICES, INC.

Engineering, Construction and Management Solutions

DAILY CONSTRUCTION REPORT

DATE: 10/9/02

PROJECT: AC5

JOB NO:

CLIENT: MWH

PROJECT MANAGER: John McDonough

WEATHER Partly Cloudy / Sunny

TEMP: 55° - 65°

HUMIDITY:

WIND/DIR: South Southwest

AVERAGE FIELD FORCE

Name of Subcontractor	Non-Manual	Manual	Remarks
Kelloria Trucking			Mob Equipment
Austgen Equipment Rec.			5 trucks 36 Loads

VISITORS:

Time	Name	Representing	Remarks

EQUIPMENT UTILIZED FOR WORK ACTIVITIES

Case 580, Bobcat with trencher, D5, Compactor, Drum Roller

UNUSUAL ITEMS

CONSTRUCTION ACTIVITIES

7:10 Safety meeting

Began trenching from C19, D5 began re-work of subgrade, Dug hole to bury concrete and exposed drums.

Discussed truck traffic with MWH. Site Accessed from South, Exit to North.

Clay trucks started @ 9:30 Dumping on South between C21 + C22.

Trucks Reversed. Enter North Gate Depart South Gate.

Great Lakes Started Some Moisture + Density test on Clay

DISTRIBUTION
1. Proj Mngr.
2. Field Office
3. File

By: Dan Petrich Title: Supervisor

DAILY CONSTRUCTION REPORT
(Cont'd)

DATE: 10/9/02

CONSTRUCTION ACTIVITIES
Great lakes tested 3 spots: on first lift North of South entrance A: 12% moisture 91.1% Fail B: 22% moisture C: 18% moisture 95% Pass Pipe Installed from C21-to C16

DISTRIBUTION
1. Proj Mngr.
2. Field Office
3. File

By: Dan Pedrick Title: Supervisor

DAILY AIR MONITORING LOG
ACS NPL SITE
Griffith, Indiana

Date: 10/9/02 Page 1 of 1

Site Activity: Trench preparation, installation, Clay Spreading

Monitoring Performed by: Dan Petrick Company Name: HHST

Time	Monitoring Location	Instrument	Reading (ppm)	Comments	
8:00	C21 to C17	PID	0.2 avg 63 peak	Trench Preparation	32 min
9:00	C20 to C17	PID	1.0 avg 28.5 peak	Pipe installation Respirators worn	2:37
12:30	C21 to C16	PID	11.7 avg 1282 peak	Pipe Installation Respirators worn	2:49

HARD HAT SERVICES, INC.
Engineering, Construction and Management Solutions

DAILY CONSTRUCTION REPORT

DATE: 10/10/02

PROJECT: ACS
JOB NO:
CLIENT: MWH
PROJECT MANAGER: John McDonough

WEATHER Sunny
TEMP: 60°
HUMIDITY:
WIND/DIR: South, Southwest

AVERAGE FIELD FORCE

Name of Subcontractor	Non-Manual	Manual	Remarks
Kelly's Trucking			
Aurtgen Equipment			

VISITORS:

Time	Name	Representing	Remarks

EQUIPMENT UTILIZED FOR WORK ACTIVITIES

Case 580, Bobcat, Compactor, Fusion machine, Cat D5, Compact Roller, Tractor with Discs

UNUSUAL ITEMS

CONSTRUCTION ACTIVITIES

7:10 Safety Meeting
Continued trench from C16 to C11. encountered 2x3" PVC Pipes and 1) 2" HDPE pipe. Pipes were damaged and repaired.

Clay continued to be moved in on west side of Site.

FML was put down per drawing provided by MWH

Finished installation of 3" Conveyance Pipe. ~~Caps put on ends near C9+C10 3p~~
Drums found near surface @ C9+C10. Pipe brought over drums per MWH

DISTRIBUTION 1. Proj Mngr.
2. Field Office
3. File

By: Dan Petrich Title: Supervisor

DAILY CONSTRUCTION REPORT
(Cont'd)

DATE: 10/10/02

CONSTRUCTION ACTIVITIES
1st lift of Clay on west side of site has been spread out. Great lakes performed some compaction tests. Need to work area for moisture content and compaction. No clay scheduled for tomorrow.
Pressure tested #3 Pipe loop from A4 Start 3:40 90 psi (OK) Finish 3:55 Mike + Tom (MWH)

DISTRIBUTION
1. Proj Mngr.
2. Field Office
3. File

By: Dan Petrich Title: Supervisor

DAILY AIR MONITORING LOG
ACS NPL SITE
Griffith, Indiana

Date: 10/10/02	Page 1 of 1
Site Activity: Pipe installation, Clay displacement, Compaction	
Monitoring Performed by: Dan Pefrock	Company Name: H+S E

Time	Monitoring Location	Instrument	Reading (ppm)	Comments	
8:00	C16 to C11 on Case 580 during Trenching	pid	4.2 avg 120 peak	Respirators were worn	3:33
1:00	C12 to C7	pid	3.9 avg 368 peak	Pipe installation Respirators worn	1:19

HARD HAT SERVICES, INC.

Engineering, Construction and Management Solutions

DAILY CONSTRUCTION REPORT

DATE: 10/11/02

PROJECT: ACS

JOB NO:

CLIENT: MWH

PROJECT MANAGER: John McDonough

WEATHER Sunny

TEMP: 55°-72°

HUMIDITY:

WIND/DIR: Variable Northwest

AVERAGE FIELD FORCE

Name of Subcontractor	Non-Manual	Manual	Remarks
Kelderman Trucking			
Area Survey			
Great Lakes			

VISITORS:

Time	Name	Representing	Remarks

EQUIPMENT UTILIZED FOR WORK ACTIVITIES

Case 580, Bobcat, Cat D5, Cat 963, water truck

UNUSUAL ITEMS

CONSTRUCTION ACTIVITIES

7:10 Safety Meeting

Kelderman working West side for moisture + Compaction.

Area Survey shooting pipe from C21 to C2 with stubs.

Fixed 3" Cooling water Supply and return (PVC)

Backfilled Pipe trench from C19 to C10

Kelderman Continued working 1st lift of Clay. Areas # 5, 6, 7, 8, 9, 10 were passed by Great lakes for Compaction + moisture.

DISTRIBUTION 1. Proj Mngr.
2. Field Office
3. File

PAGE 1 of 1 PAGES

By: Dan Petrich Title: Supervisor

DAILY AIR MONITORING LOG
ACS NPL SITE
Griffith, Indiana

Date: 10/11/02	Page 1 of 1
Site Activity: Fix pipe + Backfill trench	
Monitoring Performed by: Dan Patrick	Company Name: HHSI

Time	Monitoring Location	Instrument	Reading (ppm)	Comments
8:30	C19 to C9	Pid	6.8 avg 321 peak	Respirator worn

2:40

HARD HAT SERVICES, INC.

Engineering, Construction and Management Solutions

DAILY CONSTRUCTION REPORT

DATE: 10/14/02

PROJECT: ACS
JOB NO:
CLIENT: MWH
PROJECT MANAGER: John McDonough

WEATHER Sunny
TEMP: 45° - 56°
HUMIDITY:
WIND/DIR:

AVERAGE FIELD FORCE

Name of Subcontractor	Non-Manual	Manual	Remarks
Kelsey Trucking			
Great Lakes			

VISITORS:

Time	Name	Representing	Remarks

EQUIPMENT UTILIZED FOR WORK ACTIVITIES

Case 580, 963 loader, water truck, Bobcat, trackhoe with Disc, Cat D5

UNUSUAL ITEMS

CONSTRUCTION ACTIVITIES

7:10 safety meeting
Finished backfilling pipe trench from C10 to C7
Dug hole in subase to bury residual debris from east side of site.
Removed Railroad ties and staged for ACS
Spread excess material on far west side of site.
Placed FAGI on pipes on west side of Break room, storm drain pipe (NE side) and around drain on South East side.
Great lakes passed all but three AICs on far west side, short on clay (1st lift)

DISTRIBUTION
1. Proj Mngr.
2. Field Office
3. File

By: Dan Kotrich Title: Supervisor

HARD HAT SERVICES, INC.
Engineering, Construction and Management Solutions

DAILY CONSTRUCTION REPORT

DATE: 10/15/02

PROJECT: ACS
JOB NO:
CLIENT: MWH
PROJECT MANAGER: John McDonough

WEATHER Partly Cloudy
TEMP: 40°-55°
HUMIDITY:
WIND/DIR:

AVERAGE FIELD FORCE

Name of Subcontractor	Non-Manual	Manual	Remarks
Kelderman Trucking			
Great Lakes			

VISITORS:

Time	Name	Representing	Remarks

EQUIPMENT UTILIZED FOR WORK ACTIVITIES

967 loader, Tractor with disc's, Roller Compactor, water truck

UNUSUAL ITEMS

One of the clay trucks hit the ACS fence Gate.

CONSTRUCTION ACTIVITIES

7:10 Safety meeting

finished putting Clay on far west side of Site.

Began Spreading Clay on East side of Site, Adding water during process.

48 loads of Clay brought in.

DISTRIBUTION
1. Proj Mngr.
2. Field Office
3. File

By: Dan Pettich Title: Supervisor

HARD HAT SERVICES, INC.
Engineering, Construction and Management Solutions

DAILY CONSTRUCTION REPORT

DATE: 10/16/02

PROJECT: ACS
JOB NO:
CLIENT: NWH
PROJECT MANAGER: John McDonough

WEATHER Cloudy, Rain
TEMP: 50°-55°
HUMIDITY:
WIND/DIR:

AVERAGE FIELD FORCE

Name of Subcontractor	Non-Manual	Manual	Remarks
Keltora Trucking			

VISITORS:

Time	Name	Representing	Remarks

EQUIPMENT UTILIZED FOR WORK ACTIVITIES
UNUSUAL ITEMS
CONSTRUCTION ACTIVITIES
7:10 Safety meeting No work Rain day

DISTRIBUTION
1. Proj Mngr.
2. Field Office
3. File

By: Dan Lotridge Title: Supervisor

HARD HAT SERVICES, INC.

Engineering, Construction and Management Solutions

DAILY CONSTRUCTION REPORT

DATE: 10/17/02

PROJECT: ACS

JOB NO:

CLIENT: MWH

PROJECT MANAGER: John McDonagL

WEATHER Partly Cloudy

TEMP: 45°-55°

HUMIDITY:

WIND/DIR:

AVERAGE FIELD FORCE

Name of Subcontractor	Non-Manual	Manual	Remarks
Kaldorn Trucking			

VISITORS:

Time	Name	Representing	Remarks

EQUIPMENT UTILIZED FOR WORK ACTIVITIES

963 loader, Roller Compactor

UNUSUAL ITEMS

CONSTRUCTION ACTIVITIES

7:10 Safety Meeting

No Clay. Austgen was unable to deliver clay because of weather.

Kaldorn worked clay on East side of site #7 9:30 AM.

Pressure test #17 Start 11:43 90 PSI Finish 11:58 OK
89 PSI 1% loss

DISTRIBUTION
1. Proj Mngr.
2. Field Office
3. File

By: Dan Petrich Title: Supervisor

HARD HAT SERVICES, INC.

Engineering, Construction and Management Solutions

DAILY CONSTRUCTION REPORT

DATE: 10/18/02

PROJECT: AC5

JOB NO:

CLIENT: MWH

PROJECT MANAGER: John McDonough

WEATHER Cloudy, Rain

TEMP:

HUMIDITY:

WIND/DIR:

AVERAGE FIELD FORCE

Name of Subcontractor	Non-Manual	Manual	Remarks
Kaldera Trucking			

VISITORS:

Time	Name	Representing	Remarks

EQUIPMENT UTILIZED FOR WORK ACTIVITIES
UNUSUAL ITEMS
CONSTRUCTION ACTIVITIES
7:10 Safety Meeting No Clay, No work

DISTRIBUTION
1. Proj Mngr.
2. Field Office
3. File

By: Dan Pettrich Title: Supervisor

HARD HAT SERVICES, INC.

Engineering, Construction and Management Solutions

DAILY CONSTRUCTION REPORT

DATE: 10/21/02

PROJECT: ACS
JOB NO:
CLIENT: MWH
PROJECT MANAGER: John McDonough

WEATHER Sunny
TEMP: 40°-55°
HUMIDITY:
WIND/DIR:

AVERAGE FIELD FORCE

Name of Subcontractor	Non-Manual	Manual	Remarks
Kelderer Trucking			
Great Lakes	11:30 - 4:00pm		

VISITORS:

Time	Name	Representing	Remarks

EQUIPMENT UTILIZED FOR WORK ACTIVITIES

Cat 963, water truck, tractor with Discs.

UNUSUAL ITEMS

CONSTRUCTION ACTIVITIES

7:10 Safety meeting
Clay trucks started @ 7:50 am. Put caution tape flags on all truck Route gates

Finished spreading 1st lift on East side.
Tested East side by Great Lakes. Passed areas 15, 16, 19, 21, 23, 25 22, 24.

Began spreading 2nd lift on west side.

71 loads of clay per tickets

DISTRIBUTION
1. Proj Mngr.
2. Field Office
3. File

By: Dan Petrich Title: Supervisor

HARD HAT SERVICES, INC.

Engineering, Construction and Management Solutions

DAILY CONSTRUCTION REPORT

DATE: 10/22/02

PROJECT: ACS

JOB NO:

CLIENT: MWH

PROJECT MANAGER: John McDonough

WEATHER Partly Cloudy

TEMP: 45°-60°

HUMIDITY:

WIND/DIR:

AVERAGE FIELD FORCE

Name of Subcontractor	Non-Manual	Manual	Remarks
Kolodge Trucking			
Great Lakes			

VISITORS:

Time	Name	Representing	Remarks

EQUIPMENT UTILIZED FOR WORK ACTIVITIES

Cat 963, water truck, Tractor with Discs, Compact Roller

UNUSUAL ITEMS

CONSTRUCTION ACTIVITIES

7:10 Safety Meeting

Continued Second lift on West side of Site.

Passed Compaction & moisture on East side, #s 17, 20, 18

Passed Compaction & moisture on West side Second lift #s 1, 2, 3, 10, 7, 4

DISTRIBUTION
1. Proj Mngr.
2. Field Office
3. File

By: Dan Petrich Title: Supervisor

HARD HAT SERVICES, INC.

Engineering, Construction and Management Solutions

DAILY CONSTRUCTION REPORT

DATE: 10/23/02

PROJECT: ACS

JOB NO:

CLIENT: MWH

PROJECT MANAGER: John McDonough

WEATHER Cloudy

TEMP: 40°-55°

HUMIDITY:

WIND/DIR:

AVERAGE FIELD FORCE

Name of Subcontractor	Non-Manual	Manual	Remarks
Kelderia Trucking			
Great Lakes			
Area Survey			

VISITORS:

Time	Name	Representing	Remarks

EQUIPMENT UTILIZED FOR WORK ACTIVITIES

Cat 963, Water truck, Tractor with Disc's, Compact Roller, Cat D5

UNUSUAL ITEMS

CONSTRUCTION ACTIVITIES

7:10 Safety meeting

Continued spreading Clay on West side heading east

Area survey layed out Grade Stakes on East Side

Great Lakes cleaned West side Second lift for compaction & moisture.

DISTRIBUTION
1. Proj Mngr.
2. Field Office
3. File

By: Dan Petrich Title: Supervisor

HARD HAT SERVICES, INC.

Engineering, Construction and Management Solutions

DAILY CONSTRUCTION REPORT

DATE: 10/24/02

PROJECT: ACS

JOB NO:

CLIENT: MWH

PROJECT MANAGER: John McDonough

WEATHER Cloudy / Rainy

TEMP: 40° - 48°

HUMIDITY:

WIND/DIR:

AVERAGE FIELD FORCE

Name of Subcontractor	Non-Manual	Manual	Remarks
Kelder Trucking			
Great Lakes			
Area Survey			

VISITORS:

Time	Name	Representing	Remarks
Cat 963, Cat D5, water truck			

EQUIPMENT UTILIZED FOR WORK ACTIVITIES

Cat 963, Cat D5, water truck, Tractor with Disc's, Compact Roller

UNUSUAL ITEMS

CONSTRUCTION ACTIVITIES

7:10 Safety meeting

Continued and finished Spreading Clay on East Side of Site. Great Lakes completed Sand Cone test and Cleared all but two locations with trailer. Second Sand Cone + Final trailer test yet to be performed.

Area Survey shot first contour elevations on final grade of Cap.

Kelder prepared for equipment to be Demobilized.

DISTRIBUTION
1. Proj Mngr.
2. Field Office
3. File

By: Dan Patrick Title: Supervisor

HARD HAT SERVICES, INC.

Engineering, Construction and Management Solutions

DAILY CONSTRUCTION REPORT

DATE: 10/25/02

PROJECT: ACS
JOB NO:
CLIENT: MWH
PROJECT MANAGER: John McDonough

WEATHER Rain
TEMP:
HUMIDITY:
WIND/DIR:

AVERAGE FIELD FORCE

Name of Subcontractor	Non-Manual	Manual	Remarks
Area Survey			

VISITORS:

Time	Name	Representing	Remarks

EQUIPMENT UTILIZED FOR WORK ACTIVITIES

Survey equipment

UNUSUAL ITEMS

CONSTRUCTION ACTIVITIES

8:00
Met with Area Survey to get Final grade progress.
First Contour shot near perimeter. Will continue as weather permits.

DISTRIBUTION
1. Proj Mngr.
2. Field Office
3. File

By: Dan Petrich Title: Supervisor

HARD HAT SERVICES, INC.
Engineering, Construction and Management Solutions

DAILY CONSTRUCTION REPORT

DATE: 10/28/02

PROJECT: ACS
JOB NO:
CLIENT: MWH
PROJECT MANAGER: John McDonough

WEATHER Cloudy
TEMP: 40°-52°
HUMIDITY:
WIND/DIR:

AVERAGE FIELD FORCE

Name of Subcontractor	Non-Manual	Manual	Remarks
Area Survey			

VISITORS:

Time	Name	Representing	Remarks

EQUIPMENT UTILIZED FOR WORK ACTIVITIES

UNUSUAL ITEMS

CONSTRUCTION ACTIVITIES

9:00 am Safety Meeting
obtaining final Clay layer Survey elevations
finalizing three Moisture + Compaction Areas (20, 15, 17) OK
Delivered Clay Cap corrections to Eldorn.

DISTRIBUTION
1. Proj Mngr.
2. Field Office
3. File

By: Dan Patrick Title: Supervisor